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THE MORPHOLOGY OF BUREAUCRATIC KNOWLEDGE

by

Erick Schmidt

A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Morphology of Bureaucratic Knowledge," submitted by Erick Schmidt, in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

This thesis presents a conceptual scheme which focuses on the formation of knowledge as an elemental process in the functioning of complex bureaucratic systems. The methodology utilizes case studies of programs and incidents relating to the Government of Alberta.

In Chapter II, major theoretical perspectives bearing on the study of bureaucratic organizations are reviewed. This includes reference to Marx, Weber and Michels; and comments on human relations concepts, functionalism and systems theory. The development of cybernetic models is outlined providing a background for the thesis model.

In Chapter III, the cybernetic model presented in this thesis is described, citing its relationships to previous models, its limitations, and the characteristics of its key components. This is accompanied by a graphic outline.

Chapter IV contains an analysis of the mental health case, based on a major programming crisis in the Government of Alberta. This case illustrates the utility of the cybernetic model as a descriptive and analytical tool for understanding complex government processes. It sensitizes the analyst to the power of information control, the operation of error, distortion and verification, and the critical relationship between knowledge formation and subsequent action.

In Chapters V, VI, VII and VIII, the four subsystems of the expanded model are described and discussed using further case histories. These subsystems, each in itself a cybernetic process focusing on one of the four elements implicit in any purposive action, are designated as follows: ideo-telic, techno-methodological, mechanical and respondent.

Chapter IX discusses theoretical findings. It is concluded that a complex organizational system is fraught with difficulties if the knowledge which forms at each stage, on which decisions and actions are based, is not composed of representative information concerning the initiating social phenomena. The formation of representative information sets, the elements of knowledge, is jeopardized by two processes. One is the erroneous formation of knowledge, resulting from deficiencies in intelligence, time and memory in relation to the complexity of the phenomena. The other process is malformed information sets resulting from deliberate information distortion and manipulation, emanating from the activity of subversive value centres in the system's communication process. This chapter outlines a paradigm of models that emerge from the previous analyses.

In the final chapter, implications for public policy are reviewed, focusing on issues relating to the complexity and diversity of social life; the uniqueness of social phenomena and the function of parity information in democratic societies.

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TABLE OF CONTENTS

CHAPTER PAGE

I INTRODUCTION 1

Statement of the Problem 4

Methodological Approach 7

II THEORETICAL BACKGROUND 9

Classic Theories 9

Management and Human Relations Theories 12

Functionalism and Social Systems 13

Decision-Making and Cybernetic Systems 15

Development of Cybernetic Models 17

III THE THESIS MODEL 27

Elements of the New Model 31

Limitations of the Model 35

Components in the Model 36

Social Phenomena 36

Knowledge about the Phenomena 38

Intelligence, Time and Memory 40

Communication Stages 44

Erroneous Information Sets 54

Information Fidelity 56

Control/Decision Centre 59

CHAPTER PAGE

Alterant/Subversive Centre 62

Effector Action Sets 64

Consequences 65

IV THE MENTAL HEALTH CASE STUDY 67

The Phenomena 67

The Official Information Channel 73

The Independent Information Channel 81

A Special Committee on Working Conditions in Health Institutions 82

The Edmonton Journal Series 83

Professional Organizations and Special Interest Groups 88

Resignation of the Edmonton Guidance Clinic Director 92

The Board of Visitors' Report 93

The Matching of Official and Parity Information .. 94

Rebuttals 95

New Program Announcements 97

Information Control 99

Conclusion 113

V THE IDEO-TELIC SYSTEM 115

Definition 115

Time Problem 117

Intelligence Problem 121

Memory Problem 124

Information Distortion 125

CHAPTER PAGE

Error Resolution 129
Distortion Resolution 133
VI THE TECHNO-METHODOLOGICAL SYSTEM 136
Governmental Situation 139
Characteristics 142
Superior Specialist Knowledge 143
Confidentiality and Secrecy 144
Goal Displacement 147
Problematic Features 148
The Problem of Entropy 154
Case Study - The Alberta Ecology Corps 155
VII THE MECHANICAL SYSTEM 173
Case Study - The Wabasca Baby 187
VIII THE RESPONDENT SYSTEM 199
Case Study - The Welfare Bum 208
Summary 213
Error Resolution 214
Distortion Resolution 217
IX THEORETICAL CONCLUSIONS 220
General Propositions 221
Paradigm 223
X IMPLICATIONS FOR PUBLIC POLICY 236
Complexity and Diversity 238
Uniqueness of Social Phenomena 247
Parity Information 253

CHAPTER PAGE

Summary 257

***

FOOTNOTES 258

BIBLIOGRAPHY 278

LIST OF FIGURES

Figure Page

1. Bertalanffy Model 19
2. Singh Model 20
3. Buckley Model 25
4. Easton Model 26
5. General Thesis Model 33
6. Model V 227
7. Model IV 228
8. Model III 229
9. Model II 230
10. Model I 231

THE MORPHOLOGY OF BUREAUCRATIC KNOWLEDGE

CHAPTER I

INTRODUCTION

This dissertation is a theoretical response to a concern about bureaucratic organizational systems. This study will present a conceptual scheme which focuses on the formation of knowledge as an elemental process in the functioning of bureaucratic phenomena.

One of the most pervasive sentiments encountered in popular critiques of western society is that democratic life styles are being increasingly threatened by the bureaucratic nature of social life. Gouldner reviewed similar attitudes in modern theories of bureaucracy, criticizing the "metaphysical pathos" of pessimism and fatalism.[1] There is no question that nearly every major institutional sector of society, whether it be educational, economic, governmental, military or religious, is moving increasingly towards greater rationalization and bureaucratization. This is seen in centralization and integration of activities, occupational specialization, elaboration of regulations and specifications, and the federation of computerized data systems containing personal files.

In The Homeless Mind, Peter Berger and his colleagues[2] view bureaucracy as one of the key phenomena of modernity, arbitrarily superimposed on nearly every sector of social life. As an impersonal form of organization, treating the individual "as a number", it is particularly threatening to the consciousness of individuals who affirm individualistic and personalistic values. They comment:

> Where such values are highly developed, it is likely that the intrinsic abstraction of bureaucracy will be felt as an acute irritation at best or an intolerable oppression at worst. In such cases the "duties" of the bureaucrat collide directly with the "rights" of the client - not, of course, those "rights" that are bureaucratically defined and find their correlates in the "duties" of the bureaucrat, but rather those "rights" that derive from extrabureaucratic values of personal autonomy, dignity and worth.[3]

If it is true that one of the major discontents in modern life is the dominant presence of bureaucratic process yielding feelings of alienation, helplessness and incomprehensibility, then it is incumbent upon the social scientific community to analyze and explain this phenomena, if only to insure that the independent and free inquiry of social life will not itself succumb in time to the bureaucratic mentality.

The writer of this thesis experienced a unique opportunity to contribute to a social scientific understanding of bureaucratic phenomena. During a five-year period from 1966 to 1971, the writer served as Special Consultant to two Premiers and their cabinet ministers in the Government of Alberta. This assignment provided exceptional freedom to become directly involved in numerous areas of governmental policy development and programming. It was the type of opportunity to explore and reflect on bureaucratic process that would have been impossible on a formal research basis.

During the period as Special Consultant to the Executive Council (Premier and Cabinet), the writer had central involvement and responsibilities in research, conceptual analysis and organizational formation of many programs, including the following:

(1) Community Opportunity Assessment (nine-volume poverty study)

(2) Inventory of Governmental Services (six-volume analysis of government programs)

(3) The White Paper on Human Resources Development

(4) Human Resources Research Council

(5) Human Resources Development Authority

(6) Mental Health Study

(7) Penology Study

(8) Reorganization of the Department of Welfare into the Department of Social Development

(9) Reformation of the Ministry of the Provincial Secretary

(10) Establishment of the Department of Culture, Youth and Recreation

(11) Task Force on Urbanization and the Future

(12) Alberta Service Corps

(13) Alberta Ecology Corps

(14) Northern Development Study

The theoretical formulations in this thesis grew out of this rich experiential background. Participation and involvement in the above listed and other projects, involving attempts to modify and change complex bureaucratic organizations, led to an emerging conceptualization of knowledge as an "axial principle" in bureaucracy.[4]

This thesis, then, is a theoretical work resulting from an experience analogous to that of the participant observer or field anthropologist. It has two major elements. One is the outline of a complex cybernetic model of the bureaucratic system in process. The second element is the presentation of illustrative case histories. All are taken from programs and policies established by the Social Credit administration in Alberta (which held power for 35 years, from 1936 to 1971), and all occurred during the tenure of the researcher as Special Consultant to the Executive Council, with the exception of the Wabasca Case (which occurred under the succeeding administration, but related to regulations and policies established by the previous government).

Statement of the Problem

Despite the well-known analysis of Merton,[5] we are not yet able to adequately explain why bureaucratic systems, with all their modern communications techniques, burgeoning pools of information and expert opinion, are unable to function sensitively and effectively in social affairs. There are compelling reasons to believe that a part of the answer lies in the nature and uses of knowledge in bureaucracies. It is the purpose of this thesis to develop a model adequately descriptive of the processes by which information is collected and processed and knowledge is formed and disseminated in bureaucratic systems, and to explore theoretical implications based on this model.

In this thesis, an effort will be made to gain some new insights into our modern bureaucratic systems by focusing on information and knowledge as critical variables.

Control of information and its resultant effects on action and behavior has always been an obvious phenomenon of social life. This is reflected in the following popular slogans:

> "What you don't know won't hurt you".
> "Ignorance is bliss".
> "This is on the Q.T.".
> "It is better if I don't know".
> "I'll tell you if you promise not to tell anyone else".

This relationship between knowledge and consequences finds more explicit formulation in organizational life where there is often an obsession with information control.[6] Institutional strategies include confidential files, classified information, espionage to discover military, political and industrial secrets, blackmail and perjury. The critical role of knowledge is continually evident in major policy battles between advocates of increased citizen participation and open information systems, and administrators concerned with maintaining security and control of knowledge files.[7] Although acknowledging that power is ultimately based on ability to make real a threat, it appears that operational power within large organizational systems is related increasingly to accumulation and control of information and knowledge - "what you know" is becoming as important as "who you know".

Breed, in his shortened version of Etzioni's The Active Society, makes the following comments:

> To assert that knowledge is a key component in complex society is to say nothing new. It should not be necessary to proclaim the significance of this vital ingredient in a society that relies on education, science, and the need of individuals to understand not only their own specialty but their small place in the dazzling interdependence of millions and billions of other elements.
>
> Nevertheless it does seem necessary. Social scientists, in their quest to understand this fragmented but delicately organized world, have devoted much more attention to power than to knowledge. The decisions that are made to keep the world running and accelerating are seen in terms of men in positions of power. More attention to knowledge will be required in the post-modern world, with new demands and new questions and issues that surface and peak with extraordinary speed - an apt case being the speed that "ecology" issues hit politicians in 1969.
>
> With strong knowledge a group or society can more effectively seek its goals. It is freed from responding blindly, or in a traditional fashion, to

> new conditions. Knowledge is a major source of a society's capacity to guide itself. Neither power nor compassion is enough. Great differences in the quality and use of knowledge distinguish one group or society from another.[8]

The morphology, form and structure, of knowledge in bureaucracies is the focal point in the theoretical model developed in this thesis.

Methodological Approach

Sociological studies are always confronted with the methodological problem of choosing between case studies and survey studies. The one-case study method, which has been employed by many organizational theorists,[9] affords depth insights and allows a generation of hypotheses but the inability to test the hypotheses. The survey method allows for general statements,[10] but these may be of such a high level of abstraction, involving only a few select variables, that they have limited utility when relating back to specific organizations with simultaneous complex interactions.

In terms of a general science of organizations, the latter methodology is defensible when quantification of social data relating to testable hypotheses is possible. However, since the present task is development of a theoretical model, there seems to be merit in accepting the analysis of selected case studies as more fruitful for the clarification of theoretical concepts. Hopefully, at some future time, theoretical statements generated by this model can be translated into operational hypotheses making possible critical assessment.

In the remainder of this thesis, the theoretical origins will be briefly explored, a complex cybernetic model will be defined, and illustrative case history material will be presented. Following the theoretical and case study presentations, conclusions will be drawn concerning models of organization, and some implications dealing with social policy will be outlined.

CHAPTER II

THEORETICAL BACKGROUND

In this chapter, the major theoretical perspectives bearing on the study of organization will be reviewed. An appropriate starting point for the study of bureaucratic theories is the classic analyses of Marx, Weber and Michels.

Classic Theories

The Marxist concept of bureaucracy focused on the operation of the state administration and viewed its function as a mechanism by which the masters of the capitalist society dominate other social classes and perpetuate class division.[11] For Marx, the bureaucracy was a specific social group that had no essential universal function. It was the instrumental arm of the capitalist class, composed of incompetents who lacked initiative and imagination and who utilized trivial symbols and myths to justify their position. The bureaucracy was a symptom of class division and alienation, and in the Marxist view it would be dispensible with the emergence of a classless, communist society. The administrative tasks, formerly the domain of the bureaucracy, would now become the responsibility of every individual, and every man would be both administrator and beneficiary of that administrative effort.

The development of Weber's ideas about bureaucracy, in many ways a reaction to the Marxist thesis, grew out of his typology of domination and legitimation.[12] The large scale prevalence of bureaucracy in modern society was a manifestation of the legal type of social domination. Bureaucracy for him was not an identifiable group, such as Marx's state administration, and neither was it a product of a particular social, cultural class system. Bureaucracy was an organizational style that proliferated large organizations in all institutional sectors. It was a structure which had hierarchical form, where administration was characterized by the specialized knowledge and division of labour, abstract, rational rules and formal impersonality, which Weber asserted produced maximum administrative efficiency.

A third classical theorist, Michels,[13] assumed bureaucracy to be a prevailing form cf organization, similar to Weber's view but opposed to Marx's concept. What was problematic for Michels was not the necessity of bureaucracy, but the possibility of democracy within a large scale bureaucratic organization. Michels idealized direct participation by members in policy formulaticn but asserted that the increasing perplexity of organization made this possibility less and less real for the rank and file who did not have the requisite knowledge or skills. Out of this he developed his "iron law of oligarchy", which saw the monopolization of power by the leadership, as inherent in the structural nature of a bureaucracy.

These classic writers provided concepts of bureaucratic organization which, despite their limitations, posed issues which are still a challenge to theoretical analysis of bureaucracy. They all sensed in bureaucracy a threat to the free expression and political participation of society's members. Marx saw it as an instrument of oppression serving the narrow interests of the capitalists. Weber viewed increasing bureaucratization as a major threat to democracy and freedom in the western world. Michels saw an inevitable erosion of democratic participation as bureaucratic organizations became increasingly complex. A contemporary theoretical inquiry is challenged by these classic assertions to re-examine the nature of bureaucracy, and to seek new theoretical insights that may offer possibilities for redefinition and reorganization of modern life in some direction other than inevitable bureaucratic domination.

Weber and Michels both considered knowledge to be a significant element in the operation of bureaucracy. Weber wrote, "Bureaucratic administration means fundamentally the exercise of control on the basis of knowledge. This is the feature of it which makes it specifically rational".[14] For Michels, the specialized knowledge acquired by the leadership, and the manipulation of information communicated from leaders to members, is central to the process by which an oligarchic system emerges. In these theories, knowledge was assumed to be critical, but the theoretical elaboration of the nature and form of knowledge was not emphasized.

Management and Human Relations Theories

The generation of theorists that followed these classical writers focused on narrower organizational issues such as efficiency in production, the social experience of workers, and effective decision-making, which related to practical problems facing administration and management.

Taylor, who gave original definition to the school of scientific management,[15] attempted to develop objective criteria for job performance which would help maximize the productivity of the individual worker. Time motion studies and precise job classifications (which are still widely used) emerged as the techniques in scientific management's mechanistic model of organization. Later theorists and research studies discredited this approach for its disregard of psycholcgical and sociological variables affecting worker performance.[16] This theoretical approach was largely limited because it attempted to solve organizational problems through an inappropriate level of analysis, the individual, and employed a narrow conceptual model, the machine.

The need to include feelings and attitudes of workers in an analysis of industrial organization led to the development of what is commonly called the human relations school.[17] Following the pioneering work of Mayo and his colleagues at the Western

Electric factory,[18] the theoretical focus in many organizational inquiries shifted to the interaction between the individual and other members of his immediate work group. Out of this analysis emerged a conceptual distinction between formal and informal organization, the former describing patterns prescribed by formal administrative rules, while the latter defined the behavioural patterns arising informally from the interaction of individuals working in a group. Leading interaction theorists, including W.F. Whyte and G. Homans, stressed sentiments (how individuals feel and respond), activities (how individuals act), and interactions (relationships and contacts) as critical variables in organizational studies.[19] The human relations approach moved the level of analysis from mechanical and physiological factors to psychological and social-psychological variables. However, theorists of this school, whose explanations derived from individual and small group phenomena, did not acknowledge emergent organizational properties that are not subject to reductionist analysis.

Functionalism and Social Systems

The dominant sociological framework that raised the level of analysis from the individual to the organization is functionalism, which employs the central concept of "system".[20] Having its ancestry in early organismic models, followed by the inflexible structural-functionalism of cultural anthropologists such as Malinowski and Radcliffe-Brown, this basic theoretical orientation gained dominance through the work of Merton on conceptual refinement (freeing it from conservative bias with the concepts of functional and dysfunctional consequences),[21] and the elaborate applications by Parsons to societal phenomena.

Parsons views the organization as a social system composed of subsystems[22] which operate to meet four basic functional requirements of the larger system: adaptation, goal achievement, integration and latency resolution. The analytical focus is on values and their differentiation into various normative patterns determining the manner in which the functional requirements are met. Parsons' contribution is that he has provided a theoretical perspective that can relate to various levels of analysis from the individual through to the macrosocietal structure.[23]

A major criticism has been the "maintenance bias" inherent in his theoretical formulations, which makes it difficult to satisfy questions regarding conflict and change.[24] The model outlined in this thesis has characteristics that relate to the modern functionalist's systems framework. However, the model moves outside the homeostatic, equilibrium, system survival debates of functionalism to adaptive, self-modifying and organizational reforming issues.[25] While Parsons focuses on the cultural patterning and organization of values, this model focuses on the organization of information and knowledge.

Decision-Making and Cybernetic Systems

The model in this thesis has closest relationship to organizational theories focusing on decision-making processes and communication networks. Herbert Simon defined the central task of participating in purposive organization as decision-making.[26] He developed an organization theory that attempted to integrate both human relations and economic theories by focusing on rational and non-rational aspects in formal organizations. In an economic model, decisions would be the rational conclusion of complete knowledge related to value preferences. However, Simon viewed the possibility of complete rationality as bounded by the real decision-makers' limitations arising from unconscious habits, personal motivations and values, and the limitations in basic knowledge and information. This last category of knowledge limitation in Simon's organizational theory relates directly to the topic of this thesis. Simon's pioneering work shifted attention to organizations as decision-making, communicating units. It remained, however, a social-psychological perspective, analyzing individual characteristics, and was limited in explaining broad organizational issues found in bureaucratic systems.

The theoretical model which provides a basic orientation for this thesis is general systems theory, originally outlined by Ludwig von Bertalanffy.[27] Moving beyond the limitations of mechanistic and organismic models, and focusing on elements of communication and control in open systems, this model has incorporated the principle of "feedback" central to Norbert Wiener's definition of "cybernetics".[28]

The cybernetic system is basically a feedback network that cycles information through detectors, governors and effectors, allowing the organization to continually re-adjust on the basis of new information. This approach, while acknowledging the telic nature of formal organizations, is not locked into the concept of social equilibrium whose control mechanisms attempt to bring deviant behaviour back into compliance with organizational norms. The cybernetic model is not as rigid, and can conceptually handle restructuring of the organization in the light of new information.

Hughes has described a new cybernetic systems model which embodies self-modifying communication networks. He defines this type of system as "a collection of interacting, diverse elements which function (communicate) within a specified environment to process information in order to achieve one or more desired objectives. Feedback is essential...a cybernetic system is complex, dynamic and adaptive".[29]

This model suggests that simplified but helpful analogies for human organizations, such as "bureaucracies", can be found in electronic networks, nerve systems and computers. These communication mechanisms "function as 'sense organs', furnish 'interpretations' of stimuli, perform acts of recognition, have 'memory', 'learn' from experience, carry out motor actions, are subject to conflicts and jamming, make decisions between conflicting alternatives, and follow operating rules of preference or 'value' in distributing their 'attention', giving preferred treatment to some messages over others, and making other decisions, or even conceivably overriding previous operating rules in the light of newly 'learned' and 'remembered' information. Parallels for this behaviour in the fields of psychology, neurophysiology, and cultural anthropology are striking".[30]

The application of this cybernetic model to human organization has been advocated and developed by social theorists such as Boulding,[31] Deutsch[32] and Buckley.[33] Although still in the embryonic stage, this conceptual approach offers the promise of new understanding into modern bureaucratic complexes, and forms the dominant conceptual orientation utilized in this thesis.

Development of Cybernetic Models

In the following section, the theoretical development and elaboration of models incorporating cybernetic concepts will be outlined. This summary treatment will both place the model developed later in this thesis within a theoretical, historical context, and will indicate the areas where the model advanced in this thesis incorporates and expands elements in the cybernetic process that were not implied in earlier schematic outlines.

Etymology

The etymology of the term "cybernetics" began during antiquity:

(1) In the Septuagint (Proverbs 23: 34; Ezekiel 27: 8,27,28) the term has reference to the master of a ship.

(2) The term had a political connotation, such as Plato's reference to the selective aspects of governing (*Republic*, I, 346 B.).

(3) The Greek term was carried into Latin as "gubernator" which became the basis for the English word governor, a term used to describe the function of political decision-making and also the self-adjusting valve on mechanical steam engines.

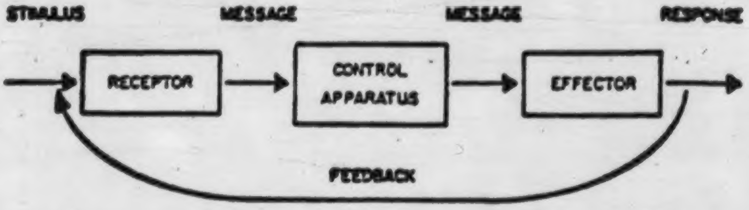
(4) Andre Ampere in the 19th Century devised the term "cybernetique" in his *Essay on the Philosophy of Science* where the term referred to the science of civil government and politics.[34]

A contemporary use of the term cybernetic to refer to communication and information control in relation to political and governmental systems, has a history that dates back far beyond Norbert Wiener's classic introduction of cybernetic theory in 1948.[35]

Simple Feedback Models

The first model (Figure 1) is a classic presentation of the

Figure 1: Bertalanffy Model



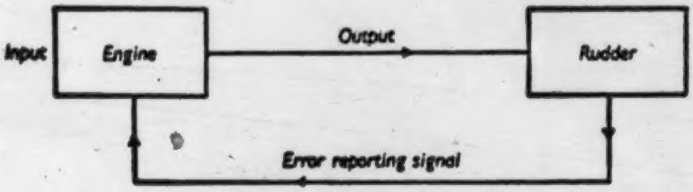
Ludwig von Bertalanffy, General System Theory, New York: George Braziller, 1968, p. 43.

feedback phenomenon that characterized the operation of a homeostatic process. This model, taken from von Bertalanffy's introduction to General System Theory, illustrates the elementary feedback mechanism. He states that this basic model "is a circular process where part of the output is monitored back, as information on the preliminary outcome of the response, into the input, thus making the system self-regulating; be it in the sense of maintenance of certain variables or of steering toward a desired goal".[36] Bertalanffy points out that this basic model incorporates the classical stimulus-response scheme, with the addition of a feedback loop so that the causality becomes circular. The flow "represents a machine-like element, that is, an order of processes based upon fixed arrangements and representing linear, though circular, causal trains".[37] Singh has catalogued its specialist applications:

> It is called "feedback" by communications engineers; "servo system", "closed-loop" or "closed-cycle control system" by systems engineers; "homeostasis" by physiologists; "reflex neural circuit" by neurologists; "petitio principii" by logicians; "vicious circle" by psychologists; and "boom and slump cycle" by economists.[38]

The following diagram (Figure 2) presents Singh's model of

Figure 2: Singh Model



Jagjit Singh, Great Ideas in Information Theory, Language and Cybernetics, New York: Dover Publications, 1966, p. 92.

a servo steering system and a feedback mechanism, with the following commentary:

> Such a device is called a "servo", meaning a mechanical slave. It is a power-boosting invention initially called for by the need to manipulate increasingly unwieldy rudders of ships as ships began to grow in size. Marine designers therefore built steam steering engines to turn the rudders, arranging their control valves admitting steam to the appropriate engine cylinder in such a way as to keep the ship automatically on a fixed course, come wave, wind, gust, or gale. There is nothing mysterious in this type of self-steering mechanism. For it functions in exactly the same manner as the erstwhile helmsman that it displaced. As we know, the helmsman at the ship's wheel estimates by means of a compass the deviation between the ship's actual and desired course and uses this information to turn the wheel to the precise extent required to correct the deviation. The ship's self-steering servomechanism likewise uses signals reporting the deviation or angular difference between the actual and prescribed course to modify the output of the engine activating the rudder exactly to the extent required to rectify the reported error. In other words, the output of the steering engine is made to influence its own input so as to steer the ship automatically on its prescribed course. This feature whereby the output of a system is used to control the source of its driving power in such a way that power is throttled, on the one hand, if its output rises beyond a determined point but is amplified, on the other, if the output lags, so that the system regulates itself automatically at the prescribed level, is the heart of all control systems simulating purposeful or teleological behavior.[39]

The elemental insight in feedback mechanisms is that information communicating the consequences of a system's own action is incorporated into the decision defining subsequent action.

The simplest systems orient their behaviour towards the attainment of a pre-programmed or fixed goal - they are blind automata which cannot seek new goals or innovate in the sense of learning to seek new objectives based on new information. This limitation is described by Deutsch:

> If the feedback is well designed, the result will be a series of diminishing mistakes - a dwindling series of under-and-over corrections converging on the goal. If the functioning of the feedback or servo-mechanism is not adequate to its task (if it is inadequately "dampened"), the mistakes may become greater; the network may be "hunting" over a cyclical or widening range of tentative and "incorrect" responses, ending in a breakdown of the mechanism.[40]

Complex Adaptive Models

While the simple, mechanical feedback model could serve as an adequate conceptual analogy for such devices as thermostats, it had limitations as a schema for behaviour and activity that was able to move beyond original programmed goals to new goals that were not defined in the original system. This requires a more elaborate model which has usually been referred to as a self-organizing, self-modifying and self-adapting system. This model seemed to be more appropriate for understanding more sophisticated functions such as those encountered in the neural processes of the body, the learning process in psychology, and the behaviour of social organizations. These models can anticipate elements of complex systems such as learning and memory. In this elaborated cybernetic model, rather than all decisions being related to the attainment of a single fixed goal, the system evaluates a goal, selects a strategy or method for the attainment of that goal, and if the results are not successful it can select another method, or define a new goal or objective.

The concept of a self-modifying communication system as descriptive of human process is implicit in the work of George Herbert Mead in Mind, Self and Society:

> ...the central nervous system has an almost infinite number of elements in it, and they can be organized not only in spatial connection with each other, but also from a temporal standpoint. In virtue of this last fact, our conduct is made up of a series of steps which follow each other, and the later steps may be already started and influence the earlier ones. The thing we are going to do is playing back on what we are doing now" (p. 71). "As we advance from one set of responses to another we find ourselves picking out the environment which answers to this next set of responses. To finish one response is to put ourselves in a position where we see other things... Our world is definitely mapped out for us by the responses which are going to take place... The structure of the environment is a mapping out of organic responses to nature; any environment, whether social or individual, is a mapping out of the logical structure of the act to which it answers, an act seeking overt expression" (pp. 128-29, and footnote 32, p. 129). "It is through taking this role of the other that (the person) is able to come back on himself and so direct his own process of communication. This taking the role of the other, an expression I have so often used, is not simply of passing importance. It is not something that just happens as an incidental result of the gesture, but it is of importance in the

> development of cooperative activity. The immediate effect of such role-taking lies in the control which the individual is able to exercise over his own response... From the standpoint of social evolution, it is this bringing of any given social act, or of the total social process in which that act is a constituent, directly and as an organized whole into the experience of each of the individual organisms implicated in that act, with reference to which he may consequently regulate and govern his individual conduct, that constitutes the peculiar value and significance of self-consciousness in those individual organisms" (p. 154, including part of footnote 7).[41]

Kurt Lewin addressed himself in 1947 to the feedback phenomenon in relation to social diagnosis in action. He states the following:

> Planned social action usually emerges from a more or less vague "idea." An objective appears in the cloudy form of a dream or a wish, which hardly can be called a goal. To become real, to be able to steer action, something has to be developed which might be called a "plan." The transition from an idea to a plan presupposes that: (i) The objective has to be clarified; (ii) The path to the goal and the available means have to be determined; (iii) A strategy of action has to be developed. These three items together make up the "general plan" which is to precede action.
>
> It should be noted that the development of a general plan presupposes "fact-finding." The original state of the idea of the goal corresponds to an area in the social field or the life space of the individual that is but little structured in itself and the relation of which to the rest of the field is not clearly determined. Fact-finding is necessary to structure the goal, its relation to the total setting and the path and means which may lead to the goal. On the basis of this fact-finding the goal is usually somewhat altered in light of the findings concerning the means available.
>
> The emerging "general plan" corresponds to a field which contains the structure of the goal, and the steps to the goal in sufficient detail to serve as a blueprint for action. It is important, however, that such a plan be not too much frozen. To be effective,

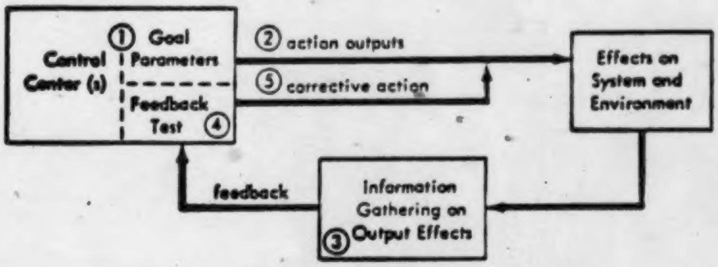
> plans should be "flexible." The flexibility of plans requires the following pattern of procedure: Accepting a plan does not mean that all further steps are fixed by a final decision; only in regard to the first step should the decision be final. After the first action is carried out, the second step should not follow automatically. Instead it should be investigated whether the effect of the first action was actually what was expected.[42]

Lewin makes reference to the function of feedback in military technology such as self-targeting gun employs, comparing this to the nature of social and administrative actions. He comments:

> An efficient steering of social action presupposes that fact-finding methods have to be developed which permit a sufficiently realistic determination of the nature and position of the social goal and of the direction and the amount of locomotion resulting from a given action. To be effective, this fact-finding has to be linked with the action organization itself: it has to be part of a feedback system which links a reconnaissance branch of the organization with the branches which do the action. The feedback has to be done so that a discrepancy between the desired and the actual direction leads "automatically" to a correction of actions or to a change of planning.[43]

This cybernetic analysis of social phenomena has had a sporadic history in social science. Recent efforts led by Buckley to focus systems theory on sociological issues reflects an awakened interest in the theory of cybernetic information communication applied to social organization. Buckley himself has outlined a rudimentary social feedback model in the following form (Figure 3):

Figure 3: Buckley Model



① Goal Parameters
Control Center (s)
Feedback Test ④
② action outputs
⑤ corrective action
Effects on System and Environment
feedback
Information Gathering on Output Effects ③

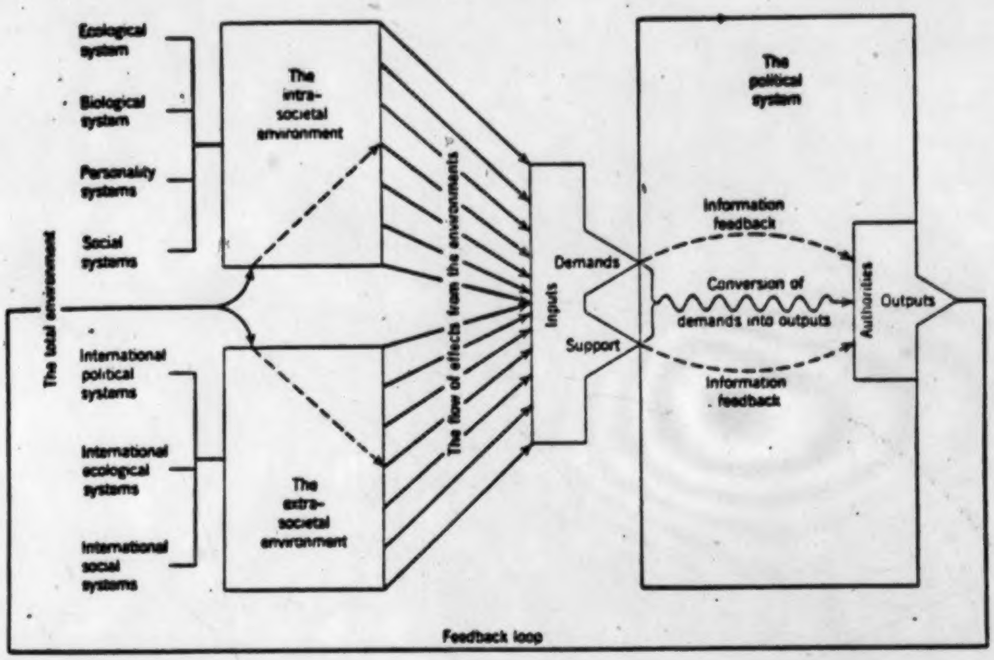
Walter Buckley, Sociology and Modern Systems Theory, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1967, p. 173.

A more elaborate model (Figure 4)[44] incorporating cybernetic concepts has been outlined by Easton to analyze the political process in dynamic terms. In describing the model, he comments:

> ... In effect it conveys the idea that the political system looks like a vast and perpetual conversion process. It takes in demands and support as they are shaped in the environment and produces something out of them called outputs. But it does not let our interest in the outputs terminate at this point. We are alerted to the fact that the outputs influence the supportive sentiments that the members express toward the system and the kinds of demands they put in. In this way the outputs return to haunt the system, as it were.[45]
>
> The broken lines in the box labeled "The political system" suggest that, through the return flow of demands and support, the authorities obtain information about these possible consequences of their previous behavior. This puts the authorities in a position to take advantage of the information that has been fed back and to correct or adjust their behavior for the achievement of their goals.

> It is the fact that there can be such a continuous flow of effects and information between system and environment, we shall see, that ultimately accounts for the capacity of a political system to persist in a world even of violently fluctuating changes. Without feedback and the capacity to respond to it, no system could survive for long, except by accident.[46]

Figure 4: Easton Model


Ecological system
Biological system
Personality systems
Social systems
The intra-societal environment
The total environment
International political systems
International ecological systems
International social systems
The extra-societal environment
The flow of effects from the environments
Inputs
Demands
Support
The political system
Information feedback
Conversion of demands into outputs
Information feedback
Authorities
Outputs
Feedback loop

While Easton considers the model to be rudimentary,[47] it does illustrate the utility of the complex adaptive model as a descriptive and analytical tool, and the conceptual advance it represents, in relation to the simple feedback models, for studying dynamic social processes.

The model that will be analyzed in the following chapters will pursue this higher order conceptualization of cybernetic systems.

CHAPTER III

THE THESIS MODEL

Norbert Wiener, the founder of modern cybernetic theory, considered the study of communication and control as essential for the analysis of social systems. In his book, *The Human Use of Human Beings*, he wrote:

> It is the thesis of this book that society can only be understood through a study of the messages and the communication facilities which belong to it... The needs and the complexity of modern life make greater demands on this process of information than ever before, and our press, our museums, our scientific laboratories, our universities, our libraries and textbooks, are obliged to meet the needs of this process or fail in their purpose. To live effectively is to live with adequate information. Thus, communication and control belong to the essence of man's inner life, even as they belong to his life in society.[48]

Concordant with this perspective, the model of a cybernetic system that will be developed in this model reflects both concepts that have evolved during the history of cybernetic models, which were summarized above, and insights derived from the observation and analysis of the communication system operating in a large, complex government.

Before this model is described, some comment should be made regarding expectations that are reasonable at the present time. Buckley rightly cautions analysts about the theoretical complexity involved in modelling complex social organizations according to feedback concepts. He states "a model seems valid as a generalized picture of what tends to occur in group goal-seeking or what would (or perhaps should) occur were it not for 'complicating factors'; but these complicating factors are just what prevents the analyst from any easy use of the model."[49] His comments are not intended to discourage theoretical efforts in this direction, but rather to indicate the primitive state of this type of scientific exploration in social analysis. In Buckley's source book, Modern Systems Research for the Behavioral Scientist, his introductory comments, regarding work in the area of self-regulation and self-direction in sociocultural systems, emphasize the "regretably small number of social scientists who have approached the sociocultural system from the modern systems perspective to any serious extent".[50] The science of cybernetics, as one of the most promising areas of modern systems theory, has only recently been used explicitly in social analysis. Political scientists, such as Karl Deutsch and David Easton, abandoning equilibrium and organismic models, pioneered the exploration of social and political process from the viewpoint of cybernetic concepts. They systematically outlined input-output, feedback-control, adaptive and self-directing processes in the social system.

When one examines complex bureaucratic governmental systems which now dominate social life in North America, there is an overwhelming sense of complexity, with program layered on program, a plurality of competing value orientations, a massive range of laws, regulations and activities, a dearth of consensus on socioeconomic indicators to assess results, an alarming build-up in size, and a seemingly irreversible consolidation and centralization of jurisdictional powers. In the face of this vast bureaucratic social reality, it is a difficult task to develop any model that might adequately outline the essential principles and processes that operate within that complex system.

The model that will be outlined in this thesis evolved over the past five years, which included a period of private research, study and reflection by the writer. It emerged out of the aforementioned experience of the writer in a complex governmental system. In an attempt to understand the critical incidents involving policy conflicts, personal misunderstandings, program failures and diverse expressions of manipulation and "empire-building", certain elements involving information and knowledge formation and control emerged as significant, recurring features. Paralleling this slowly evolving abstraction was the writer's involvement in a formal program of study and analysis of contemporary social scientific theories. This graduate education process related to the governmental experience in a dialectic manner, with the formal social scientific training serving as a critique, and adding precision to the emerging model of bureaucratic process; while the participatory experience indicated the limitations and inadequacies of prevailing theoretical formulations about complex bureaucratic organizations.

The model developed out of this interactive process which moved between formal theory and practical experience. As this inductive exercise became an increasingly systematic reflection, the constructs took the shape of a complex cybernetic model that oriented inquiry to the significance of knowledge formation for description and comprehension of bureaucratic process. In this thesis, the model is presented, described, illustrated and analyzed.

Not surprisingly, most existing models are rudimentary as analytical tools when applied to the social reality of complex organizations. The model developed in this thesis will attempt to further elaborate the cybernetic perception of social systems, thereby contributing to the ongoing clarification of the elemental processes that operate in large bureaucratic institutional environments, such as the government. By participating in this theoretical exercise, an assumption has been made that complex social processes in North America operate according to communication and control principles that remain identifiable. The other perspective would be to view western society as an increasingly complicated, disorganized system composed of many discrete centres of activity, each operating by random logic with the whole system increasing in entropy and moving toward utter chaos. This perspective has increasing legitimacy in the face of the inability of society to cope with basic phenomena such as inflation and urban crime, and could no doubt serve as a theoretical base for a study in social entropy. However, this thesis is based on an alternative theoretical commitment that sees complex social organization, despite all the contingencies, as self-correcting in principle.

Elements of the New Model

The system model outlined (depicted in Figure 5) has three dimensions. The first dimension represents social action, including the phenomena appropriate to the organization's purposes, and the activities and programs of the organization in relation to those phenomena. The second dimension portrays the information formation process, illustrating the stages and streams that are involved in developing a symbolic representation as a basis for decision and action. The third dimension symbolizes the operation of values, expressed as goals and objectives serving as the control and regulating mechanism in selecting and guiding action.

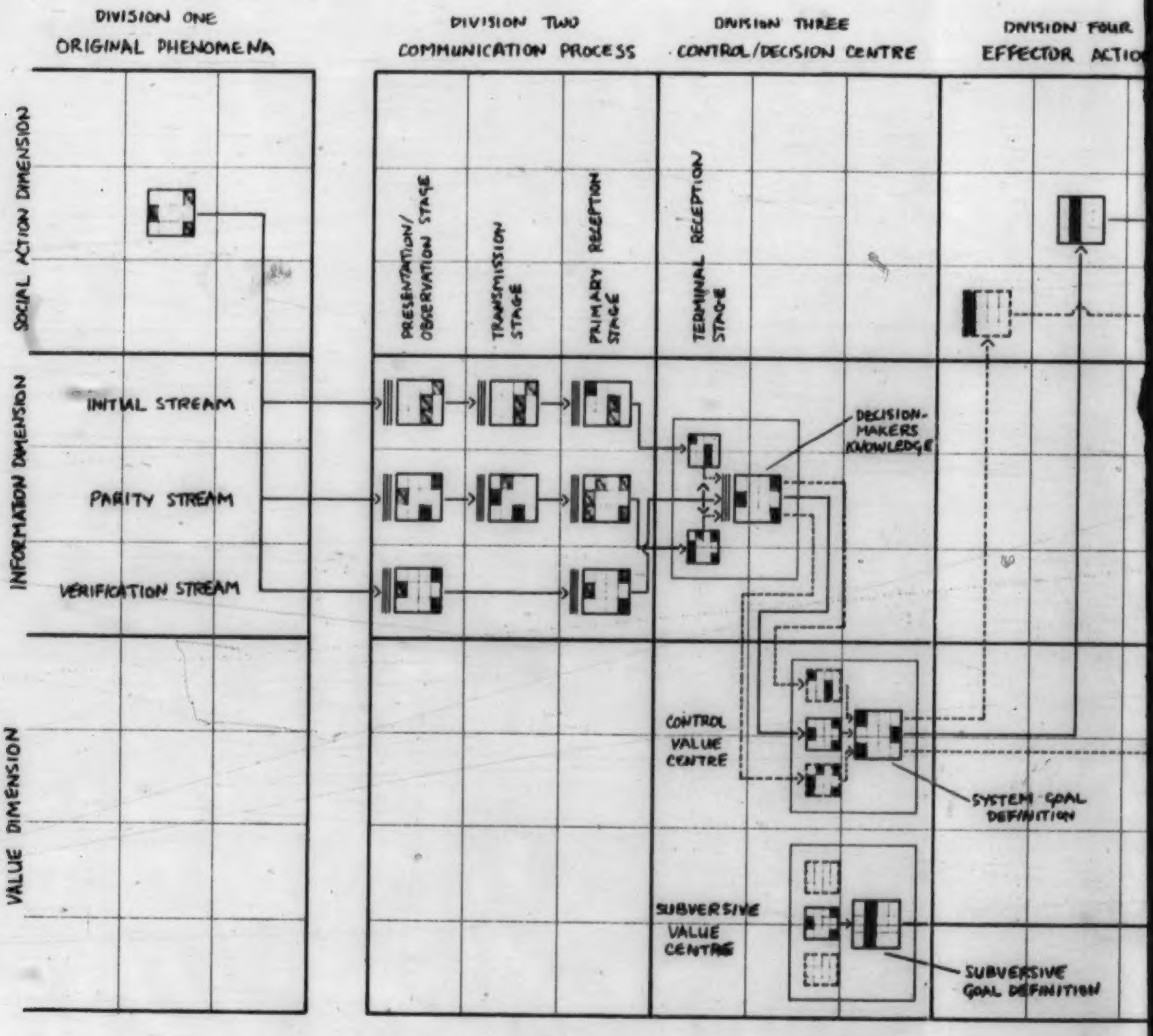
The model can also be separated into five vertical divisions. The first division comprises the original phenomena or social situation serving as the initiating element in the system; the second division is the communication process comprising individuals and organizations engaged in generating information and knowledge about the phenomena; the third division is the control/decision centre which incorporates the decision-making mechanism, operating individually or as a collection of people; the fourth division is the effector action, which is the instrumental activity flowing from decisions and functioning as the effector in the cybernetic sense; and the fifth division is the response, or consequences of the system's activities, which in a social cybernetic model means the change in the social situation that was intended as the objective of the decision-makers. (As outlined below, the consequences become the new phenomena of a succeeding cybernetic loop of information and activity.)

At this point an explanation should be made concerning the symbols used in Figure 5. Each box has three levels. Each level represents one aspect of the phenomena or information (physical attribute, value, emotion), and within each level are four positions which symbolize the possibility of variable states. To represent a particular pattern of social phenomena or the equivalent (or modified) information set, a unique configuration is highlighted in each box. Preceding each box symbolizing an information set are three vertical bars representing the processing requisites of intelligence, time and memory.

The model in this thesis thus incorporates certain elements that are not present in other models:

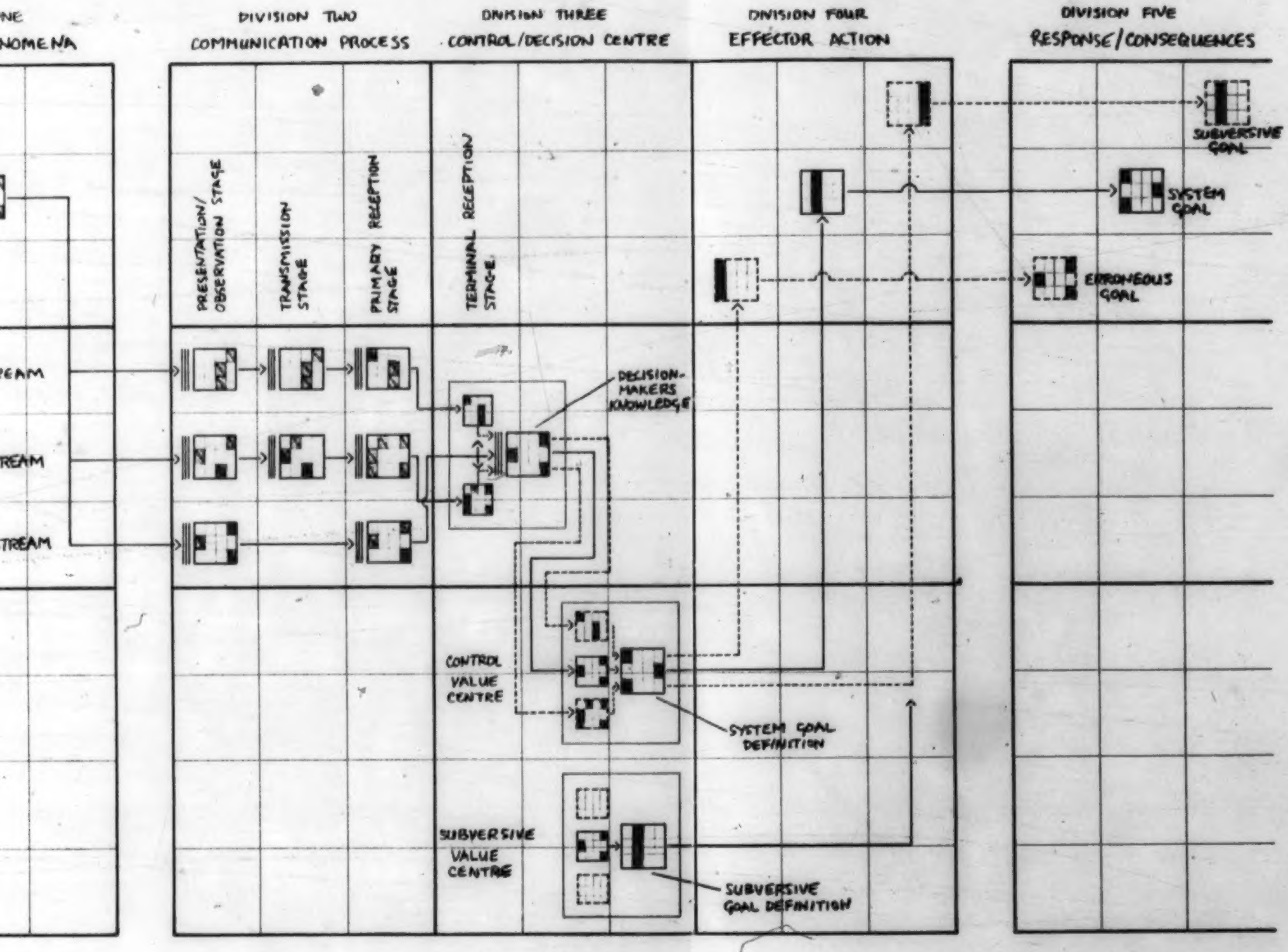
1. The model distinguishes between social reality or the human phenomena that are the object of the system's intentions and goals, and the image or information set that serves as a representation of this social reality.

GENERAL THESIS MODEL (FIGURE 5)


DIVISION ONE
ORIGINAL PHENOMENA
DIVISION TWO
COMMUNICATION PROCESS
DIVISION THREE
CONTROL/DECISION CENTRE
DIVISION FOUR
EFFECTOR ACTIO
SOCIAL ACTION DIMENSION
INFORMATION DIMENSION
VALUE DIMENSION
PRESENTATION/ OBSERVATION STAGE
TRANSMISSION STAGE
PRIMARY RECEPTION STAGE
TERMINAL RECEPTION STAGE
INITIAL STREAM
PARITY STREAM
VERIFICATION STREAM
DECISION-MAKERS KNOWLEDGE
CONTROL VALUE CENTRE
SYSTEM GOAL DEFINITION
SUBVERSIVE VALUE CENTRE
SUBVERSIVE GOAL DEFINITION

/of

THESIS MODEL (FIGURE 5)


NE
NOMENA
DIVISION TWO
COMMUNICATION PROCESS
DIVISION THREE
CONTROL/DECISION CENTRE
DIVISION FOUR
EFFECTOR ACTION
DIVISION FIVE
RESPONSE/CONSEQUENCES
PRESENTATION/ OBSERVATION STAGE
TRANSMISSION STAGE
PRIMARY RECEPTION STAGE
TERMINAL RECEPTION STAGE
EAM
REAM
TREAM
DECISION-MAKERS KNOWLEDGE
CONTROL VALUE CENTRE
SYSTEM GOAL DEFINITION
SUBVERSIVE VALUE CENTRE
SUBVERSIVE GOAL DEFINITION
SUBVERSIVE GOAL
SYSTEM GOAL
ERRONEOUS GOAL

2 of 2

2. Unlike previous models that operate with a single type of information input, this model identifies three qualitatively different types of information symbolizing three aspects of social phenomena. This reflects the difference between the nature of social phenomena, and the nature of physical phenomena which are the focal point of cybernetic theories relevant to the areas of telecommunications, computers and neural physiology. This distinction essentially recognizes the elements of values and affect that do not operate in mechanical systems. (There is not yet a left wing computer that refuses to process military programs or that becomes depressed about the boredom in the tasks it undertakes - though the creators of Hal in the science fiction movie, "Space Odyssey 2001," anticipate this eventuality).

3. The model views error not simply as the difference between the desired goal and the actualized goal, but as an information distortion process possible at a number of stages in the communication flow.

4. The model explicitly introduces the concepts of parity information and verification information, essential for confirming information fidelity.

5. The model identifies the evaluative nature of control in terms of a third dimension specifying the system's value/action model (the first dimension is social action; the second dimension is the information sets).

6. The model outlines the three elements which characterize the nature of the information processing and decision function.

7. The fully expanded model (Figure 6) defines a complex system as an interaction of four cybernetic subsystems. Previous models did not elaborate on the communication process that operated from the time there was a system output through to the time of a resultant input back into the system. The intervening processes were assumed and simply presented as a feedback loop.

These additional elements reflect the attempt to develop a model which remains within the traditions of cybernetic language and constructs and yet incorporates those recurring aspects which are significant and problematic features in a real, complex bureaucratic environment.

Limitations of the Model

The model seeks to abstract from the total reality of governmental systems those behaviors that are significant to cybernetic functions. There are certain resulting limitations on the model:

(1) By focusing on knowledge formation, the model makes certain assumptions about values. Values are considered to be the critical element determining the definition of goals and objectives. It assumes that different values result in

different goal definitions, thereby requiring different sets of requisite knowledge. There is no description of values by type, origin or formation.

(2) The model assumes the absence of economic constraints, which in real social situations operate to prevent goal attainment regardless of the adequacy of knowledge.

(3) The model is a constructed type, and is not to be considered a formal theory. Its primary function is descriptive and heuristic. In its present form, it is not a predictive tool composed of formal, testable hypotheses.

Components in the Model

1. Social Phenomena

This model is designed to help explain certain processes in formal, complex organizations. The model describes therefore a purposive, goal-seeking system that, at the outset, is oriented to a specific field of activity. The field of phenomena or the social reality which incorporates the first dimension of this model is given - it is not a question of having to select it over others. At this stage, we are not required therefore to deal with the problems of selective perception or other social-psychological mechanisms that operate when an organism chooses one field of activity against another as its focus of attention.

A formal organization, such as an automobile corporation, attempts to sell vehicles at a profit to consumers who are the respondents in that system. That social reality, the automotive consumer, is the starting phenomenon in that system. To the extent that their information is accurate about the consumer group, and their decision-making, planning and implementation is properly carried out, they will achieve the response which was their original goal. If their knowledge about the consumer is faulty, then all their other efforts are in jeopardy.

The phenomenon in this model, then, is the social reality which the system is acting upon, either to maintain the existing condition or to alter its state in some other direction that the system considers valuable and desirable. In the complex system model, the phenomenon consists of the activity and behavior that results from decisions in the preceding system. The social reality, as defined by this model, is made up of human beings. Human phenomena are comprised not only of physical attributes which they have in common with machines and simpler organisms but their state or condition also incorporates values and ethics which orient their behavior, as well as feelings and emotions. There cannot be understanding of human organization without acknowledging these three components as essential social ingredients.

In the model, the phenomenon itself is distinguished from the information about the phenomenon. All the real activity, behavior and action is part of this reality dimension and is not conceptually equated with the knowledge, understanding or comprehension of that reality. By incorporating this distinction into a cybernetic model, it is hoped to clarify the confusion implicit in some models where feedback is equated with physical action and not with information about a particular physical activity.

2. Knowledge about the Phenomena

The philosophical investigation of the origin and nature of human knowledge, called epistemology, is an expansive field, raising numerous problematic questions. It is accordingly incumbent upon an analyst to clarify the meaning of this term, if it operates as a critical concept in a theory. In a general, popular sense, knowledge is understood as acquaintance with the facts, familiarity with a particular subject, awareness of a situation, the sum of known information, enlightenment, etc. In the context of this thesis, general meanings are not adequate, and the definition must be clarified.

In this model, knowledge is the symbolic representation of specified phenomena, adequate for determining action that will attain goals relative to those phenomena. The formation of knowledge is related, therefore, to (1) the goal of the observer, (2) the phenomena this goal specifies, and (3) the characteristics of the phenomena. The definition, in the cybernetic sense, is pragmatic - it is the information required for the system to act "successfully", to reach its objectives, in a given situation.

This definition of knowledge as a symbolic information set, representative of the selected phenomena and linked to goal attainment is similar to the "symbol system", or "model" of Deutsch. He states:

> In all cases, models must be tested for their relevance: do they match those aspects of the empirical process in which we are interested to a degree of accuracy sufficient for our purposes? Whether or not a model matches reality must be established by some critical process, that is, some physical process, simple or complex, that has one kind of outcome if the matching is close enough, and another outcome if it is not.[51]

Assuming the action system has defined its goals and selected the appropriate field of phenomena (a subjective process), then the problematic issue in forming knowledge is the accurate representation of the characteristics inherent in the social phenomena. This is the objective aspect of knowledge, for the characteristics or elements of the observed situation are independent of the observer or analyst.

To deal with this objective aspect of knowledge formation, the model assumes three constituent elements in the nature of social phenomena: (1) physical attributes, (2) values, and (3) feeling or emotion. The inclusion of values and affect as formal aspects of social phenomena has kinship to Weber's "verstehen" sociology.[52] This "social action" orientation, assumed to be essential for knowledge in this model, affirms that the observer who forms the information set requires an "inside" comprehension of the values and feelings implicit in the situation.

Lacking this awareness, there can be no insight into the individual's or group's goals, or the type of action to which they would respond.

This phenomenological triad uniquely distinguishes social reality from physical reality, and recognizes the volitional nature of social systems that is not present in mechanical systems. In the model, accordingly, knowledge about social phenomena incorporates three categories of information:

(1) Information about empirical facts. This is information about social conditions based on physical indicators, generally considered the substance of positivist science. This information is often referred to as sense-datum - facts gathered from observation.

(2) Information about values. This is information about the values, aspirations or goals which are the property of the social phenomena under consideration.

(3) Information about affect. This is information which symbolizes the emotional tone, mood, morale or feeling state of the social collectivity under discussion.

3. Intelligence, Time and Memory

In any specified field of social phenomena, the configuration of the three categories of information outlined above forms a composite, symbolic representation (knowledge) of the phenomena. The attainment of this knowledge, however, is dependent on three process elements: (1) intelligence, (2) time, and (3) memory (I-T-M).

The scope and complexity of each situation in social reality, which is the focus of a purposive social organization, defines the requisite intelligence, time and memory essential for a knowledgeable understanding in relation to a specific objective. Any statement or message or symbolic formation which purports to represent that situation, which is based on a cognitive operation deficient in intelligence, time or memory essential for comprehending the situation, will yield erroneous information and lack of knowledge. These three elements are briefly defined below:

Intelligence

Intelligence generally refers to the capacity of a system to reason, understand, or comprehend the facts, truth or meaning in a situation. In the cybernetic sense, intelligence is the ability to develop "models" or symbolic representations of the environment and the system's relationship to it, enabling the system to successfully plan and execute an action that will bring the desired response from the environment. Arbib, in his discussion of intelligence,[53] views it as the ability to perceive elements of a situation beyond "raw sensation". He suggests that intelligence has three properties:

(1) Possession of a modifiable model of the world,

> with its attendant adaptability. A system to act intelligently must not only be able to take properties of its environment into account, but must be able to update its record of these properties to take account of new observations and changing relationships.
>
> (2) Flexibility and generality. An intelligent system must not only use past experience to act adaptively, but must also be able to apply its past experience to situations which are not superficially similar to those encountered before.
>
> (3) Planning. An intelligent system should use its model to plan and evaluate alternative courses of action before committing itself to one of them. For a symbol-manipulation system there may be little real distinction between planning and action, but for a robot or an animal the distinction is very real and very important - it pays to recognize a precipice in advance and plan to avoid it rather than recognizing one's mistake after going over.[54]

In the thesis model, the possibility of successful action in relation to the social phenomena will require an intelligence capacity for symbolic reorganization and recombination appropriate to the complexity of the situation.

Time

As the number of elements and components in a social situation increases, and as the interaction patterns become increasingly complex, this will be reflected in an increasing volume of information. Time represents the period or duration of concentration that will be required of the system to receive messages, recall relevant information from memory, and organize a symbol set which is representative of the phenomena in relation to the system's goals.

As the target phenomenon of the system increases in scope and complexity, the time requirement increases. Since time as a condition is largely independent of the observer (even acknowledging superior human "comprehension speeds"), the limitations on knowledge are dependent on adequate time allocation by the system.

As a decision-making system in government absorbs increasing responsibilities, it must revert to tighter scheduling and time allocation. This generally is structured according to the needs of the decision-makers, and not the issue or social situation under review. This creates serious problems for comprehension, if the volume and complexity of information increases, and available time decreases.

Memory

The memory of the system is the storage of past experience and specialized knowledge that allows the system to comprehend the information set that is flowing in for processing. The ability to understand this information is related to training, education and acquired experience. Mills, using the analogy of the prism, illustrates partially the function of memory:

> ...when someone acts in a social setting, that act, being caused by the interplay of forces within the actor, among group members, and between the group and the external world, contains sets of information about the total situation and about its various causes. The trained observer (whether member or outsider), using (as it were) his mind's eye as his prism, sees these sets, or types of messages, to be meaningful, and is able to unscramble, decode, and arrange them.[55]

Both Deutsch[56] and Arbib[57] make a distinction between current, short-term memory and past, long-term memory.

The first is the information modelling the relationship of the system to its immediate, changing environment, and the second refers to standing information pools which reflect past experience, available through recall to help us interpret present situations and plan appropriate action.

4. Communication Stages

In complex organizations, it is common for the decision-maker or control group to be remote from the real phenomena - in fact, government leaders seldom take action on the basis of direct observation and experience. They generally receive information from officials or representatives, who in turn are often positioned at the top of a hierarchical communication structure.

In this model, four stages are identified in this communication process:

(1) The presentation/observation stage
(2) The transmission stage
(3) The primary reception stage
(4) The terminal reception stage

Stage One: Presentation/Observation

The first stage is presentation or observation. At this first stage, the characteristics and conditions which represent the phenomena under assessment or examination are organized into a descriptive statement. This initial representation has high fidelity if the three categories of the social phenomena are accurately symbolized, and sufficient as a basis for decision and action: any subsequent failures in goal attainment would not be the result of inadequate or erroneous information formed at this first stage.

There are unique problems in information formation at this stage. The observation of social phenomena and the possibility of apprehending the true nature of social reality is much more complex than the physical scientist's task of dealing with organic or inorganic matter. Any specified social phenomenon, whether it be an individual or a social organization, is itself a system having awareness and its own purposes. This means that social phenomena have a capacity to reveal only selected aspects of themselves, or to camouflage some of their true characteristics: as Goffman has illustrated, there is active management of images and impressions.[58] The examination of a stone or a machine does not anticipate the possibility that this physical matter is itself thinking and developing alternate strategies of self-revelation. There is no role-playing and there can be no information control. In the complex model developed in this thesis, the communication process is an interaction between two or more subsystems, each subsystem being at its own level a complete cybernetic system. Since the social phenomenon being observed is itself observing in return, the image which is revealed is a managed image reflecting its own internal goals. A classic example of this is government analysis of an ethnic group, such as an Indian band, which often reveals to white civil servants not what it considers to be the true situation, but an image it considers will give the group a strategic advantage in relation to the government.

The first image or representation of the social situation emerges in one of two ways, either by the participants who comprise the social phenomena themselves explaining or describing their current situation, or by some observer reporting and describing the state of the social reality. The occurrence of the individuals involved in the social situation themselves describing or forming the initial information set is very common. Interviewing respondents who describe their opinions in survey studies is a prime example. The other procedure involving observers is seen in the work of the field anthropologist, the government investigator, or the newspaper reporter who first-hand views a human condition and selects certain features which form an information set.

In preceding discussion it was noted that this initial information set would be an inadequate representation of the phenomena in terms of the interest and goals of the system, if the individual or group forming this message was inadequate in the essential intelligence, time and memory that would be required to comprehend the situation in relation to the desired objective. This kind of limitation is manifest in a variety of incidents. One type of case is the poor farmer who describes his problems in terms of low market prices when in fact his soil fertility is so marginal that there is no hope for viable production. Another is an observer's description of a poor native person's low energy level as laziness when it often is a matter of malnutrition. These types of information failures reflect limitations in intelligence, time and background knowledge and experience which is referred to here as memory.

The other kind of information error that can occur at this stage, as it can at all stages, involves the deliberate distortion of information as a strategy to alter or undermine the system's achievements. This will be outlined in a later section.

This first stage in the communication process can be described in a number of ways. The result is an abstract model, a reconstruction, combining symbolic elements (depending primarily on language). This symbolic representation, here called an information set, can be transmitted in a communication process. If it is not distorted, and mirrors the real phenomena in the decision process, the decision-maker could not have effectively improved his results, even assuming direct apprehension of the initial reality.

Stage Two: Transmission

The second stage in the communication process represents a transmission stage, in which information is transferred from an initial presentation or observation, and organized for presentation to an intended receiver, in this model called the primary receptor. This second stage operation, which could be termed "replicating representations,"[59] is the classic task of the herald who bears the message from one agent to another.

In this second stage, information error is often a consequence of memory limitation, where the transmitter or reporter lacks in experience or background knowledge, affecting the fidelity of the message during translation or interpretation. The representation of the phenomena received by the primary receptor no longer corresponds to the information set formed at the first stage. Vital information is lost, and critical meanings distorted.

In a government system, the actors in this communication stage are often the official intermediates who receive the reports, demands, complaints and other images, and carry them to a higher authority. It is this group that comprises the bulk of the bureaucratic hierarchy with which citizens must contend in attempts to make their views known to senior decision-makers.

At the simplest level, the function of this stage is rote, that of storing and repeating a message. In human communication, however, it is more likely to be a translation and condensation process. One of the most serious and common breakdowns of information at this stage arises from message transmission across language groups. This occurrence is understandable in the area of bilingual translation, where information is changed going from, for example, French to English, as is common in a federal bilingual system such as Canada's. For example, at the Montmorency Conference held in Quebec in 1966, the French faction of the national Progressive Conservative party argued for a "two nation" policy within their French meaning of the term "nation" (which they equated with culture or a social group). Many of the English leadership in the party fought against the concept on the basis of their English definition of the term "nation", which they equated with a political state. In the ensuing election of 1967 the national Progressive Conservative party attempted to explain this two nation policy, which precipitated a harsh political debate because the message received by the English electorate was ambiguous due to the semantic confusion. This factor was considered to contribute significantly to the defeat of that party at the polls.[60]

A transmission breakdown is less obvious when the construct distortion arises not from translating from one language to another language but from the difference between general and specialist meanings of words within the same language group. This is a particular problem in social sciences where terms like "role", "status", "group" can all take precise meanings while remaining in current usage with a general, popular meaning. When, therefore, the findings of a social scientific review is transmitted to a non-scientific receiver, there is a high risk of information distortion or loss. To illustrate, at the conclusion of one sociological analysis comparing the jurisdictional overlaps between federal-provincial agreements and provincial departmental boundaries, an elaborate cross-impact matrix was outlined to the members of Cabinet by the Special Consultant. At the conclusion of this rather technical presentation, one minister pointedly commented, "Would someone please translate that into English for me". It was a significant response in terms of information flow and communication breakdown, for this same minister later objected strenuously to organizational reforms designed to coordinate government programs and restructure jurisdictional authority.

When the mass media and press function as second stage transmitters or communicators, deterioration of the information set often involves the loss of information about empirical characteristics, and the elaboration of evaluation and emotional content. This transformation of the information set, heightening the spectacular and dramatic elements, is consistent with the objective of newspaper corporations to increase readership and circulation. The occasional domination by the press and other media over information at this second stage of the flow process (talk shows, exclusive interviews, etc.), given their alterant goals, is highly problematic for a decision-maker if he has no alternate information source.

Stage Three: Primary Reception

At the primary reception stage, information is collected and organized for presentation to the decision-maker. The participants at this stage, in a governmental system, are the senior officials, directors, committee officers, advisors and consultants who undertake the preparation of reports and analysis that will serve as the information base for decision.

In operation, these primary receptors carry out a "gate-keeping"[61] function, which includes collecting and combining information, as well as avoidance and rejection of other messages. This is designed to regulate the flow of demands, so that decision-making centres are not overloaded with excessive volume.

Easton has an extensive discussion of this process, which he terms "demand reduction". He states:

> In most systems, even if the channels are well able to bear the load, the raw demands, in the form they take when converted from wants, seldom manage to get through unchanged to the ultimate centres where binding decisions are made. In most systems, except perhaps in the small primitive type, the demands will usually be subject to some kind of pre-processing which modifies them so that they are different than they were when first converted from wants. ... Where the initial input of demands is heavy, as in the case of most modern and transitional societies, and especially where the channel capacity to carry the flow of demands to the authorities is more than adequate, the heavy volume would create serious difficulties for the decision-makers. They could scarcely be expected to give the demands serious and adequate consideration. ... Few systems could persist if all raw demands, those initially put into a system, proceeded directly, without modification, to

the authorities, the output points.[62]

Senior authorities in government and other large organizations seldom allocate time to leave their official environment and personally investigate or report in-depth on issues for which they are jurisdictionally responsible. They generally depend on the functionaries at the primary reception stage. These individuals or groups are usually selected for their competence or professional abilities and often concentrate their efforts in specialized fields of expertise. Since the decision-maker to whom they report may have multiple responsibilities, and hold his position on some basis other than professional qualifications (political skills), the primary receptors are in an extremely powerful position regarding the control of information. If information is distorted at this stage, it generally is not because of deficiencies in intelligence, time and memory, but because the functionaries have some alterant goal which they prefer as an achievement. By controlling and modifying the messages which flow from them to the terminal receptor or decision-maker, they can perhaps modify the ensuing actions to suit their purposes.

Stage Four: Terminal Reception

In this final stage of the communication process, an information set is received by the individual or group who is the controller or decision-maker. Ministers of the Cabinet are examples of terminal receptors. This is the most critical stage because the information set that is finally formed becomes in fact the knowledge upon which decisions are made and actions are carried out. The problems of knowledge formation for the controller or decision-maker is not dissimilar from problematic features relating to previous information handlers. The decision-makers may not have sufficient intelligence in relation to the complexity of the particular phenomenon under inquiry, they may not have enough time to intake all the available information, and they may not have sufficient education or experience (memory) to comprehend the information presented to them by the primary receptors. Compounding the problems of errors which result from the foregoing limitations, there is also additional vulnerability if the terminal receptor does not have comparative information sets which provide a parity, checking function.

The possibility of subversion at this stage is more remote because it means that the decision-maker is engaged in a conflict of interest which is a high risk exercise for a functionary in present governmental systems. In subtle form it may be the injection of cultural bias or prejudice into a public decision-making process; in a flagrant form it involves corruption (kickbacks, payoffs and patronage). The decision-maker is superimposing personal values and goals on his responsibility as an organizational decision-maker.

This terminal stage in knowledge formation operating inside the decision-making centre provides the basis for all subsequent value/action sets.

5. Erroneous Information Sets

In this model, if the hypothetical information set A, B, C designate the three kinds of information which accurately represent the state of the social phenomena with which the system is concerned, then ideally a decision will be based on reliable and valid knowledge, if the information set utilized is A, B, C. This assumes that from the original definition through to the decision, there has been no information loss, distortion or error during the communication process.

In reality, the maintenance of information accuracy through multiple stages is unlikely. Easton, discussing information distortion in the political process, states:

> In part, however, the length, complexity, and fidelity of the transmission belt along which information has to be carried, if it is to reach the authorities, will contribute to the possibility and probability of error. ...in large-scale, more differentiated systems, where complex structures stand between members and the authorities, as information about support moves along a flow network toward the authorities, it may be so reinterpreted that it no longer mirrors the true state of mind of the members.[63]

In the model, there are four stages in the process where there is a possibility of information alteration. Using mathematical calculations, it can be estimated that a system, communicating a set of three classes of information through four stages creates the possibility of 4,096 possible information sets, if it is assumed that information fidelity is problematic at every stage. According to this model, maximum distortion would be represented by A subscript 1234, B subscript 1234 and C subscript 1234, which means that every aspect of the information set has been modified at every stage. Between this and the accurate representation A, B, C lies 4,094 other information forms; e.g., one information set could be represented by A1, B23 and C4, which would indicate that for A, information error was introduced when the empirical characteristics were first presented, the value representation B23 would be a statement that had been distorted both in transmission and additionally by the receptor, and C4 indicates that the emotion content of the phenomena was available at the processing stage, but was not accurately incorporated in the decision.

This formula indicates that every additional stage through which social information must pass adds dramatically to the forms an information set can take. These possibilities are illustrated below:

One stage = 8
Two stages = 64
Three stages = 512
Four stages = 4,096
Five stages = 32,768

Theoretically, if you move beyond ten stages in the information flow, there are over one billion information sets that can form, only one of which can be asserted as a knowledgeable set.

6. Information Fidelity

If the government's objective is to change conditions in society to some other state which they consider politically desirable, then they must proceed on the assumption that their understanding of that social situation to which they address their energies is an accurate representation. Their original critique of the problems in society is based on their current information about what societal conditions are. If their information and their knowledge is not accurate, then their proposals for change are not appropriate. There is always the serious possibility that the government, acting on limited or distorted information, will propose programs and actions which are not relevant and therefore the result will be some degree of failure. To the extent that a government is responding to an information set that is not representative of the phenomenon which it purports to describe, the response of the government will be a reaction not to reality but to an illusionary condition or problem. There will be a social consequence but this may even be partially unknown since the information processes are defective.

The question of accuracy or fidelity is raised when a decision-maker is provided with an information set which has been communicated through a number of stages, each a possible source of error or manipulation (bias).

This problem has been a central issue in the field of information theory. Working on the principle of reliability-through-redundancy, coding structures in telecommunications have been developed to overcome the inefficiency of transmitting a message repeatedly to insure reliable reception. C.E. Shannon developed a theorem for maximizing the rate of information flow and maintaining arbitrarily high reliability, despite all the "noise" or signal mutilations along the channel.[64]

Others have put into operation various error-detecting code systems with parity checks. One such system is described below:

> Perhaps the biggest problem in data transmission is error detection. Static, signal fading and other phone-line interference can garble or even drop codes from a block of transmitted data. If these codes are command codes an entire transmission can be altered. To detect errors, systems employ a process of "parity" checking. Those which recognize only odd or even parity, however, can be fooled by dropped or added codes. DATATRAN is far more sophisticated.
>
> DATATRAN'S unique detection/correction feature ensures that each code transmitted reaches its destination intact - and returns intact. ...DATATRAN takes over, accepting the first 62 characters of data, adding a number of parity-checking codes of its own and translating from binary to analog coding for transmission. The receiving DATATRAN automatically checks for completeness and accuracy. If no interference has occurred, the data is translated to digital signals for computer processing and the process is repeated. If an error is detected, however, the receiving terminal rejects the block and calls for retransmission.[65]

The principle of reliability-through-redundancy finds fullest expression in preparing important financial data for computer processing. For example, information for cheque-printing is keyboarded by one operator, and a second independent operator keyboards again for verification.

Problems in human communication are more complex than those occurring in data transmission. The serious loss and distortion of information in a human transmission process has been proven in social-psychological experiments. One study of rumor conducted by Allport and Postman measured information modification through a chain of ten individuals, discovering increasing distortion, including simplification and exaggeration of details, and the infusion of cultural bias.[66]

The parity information streams included in this model symbolize the essential function of redundant information as a basis for insuring the accuracy of a message.

Government leaders often choose to disregard the logic of "reliability-through-redundancy", and consequently they accept unverified information because they "trust" the source, only to discover later that they have acted on misinformation to the advantage of some subversive agent.

With the inclusion of a parity information stream, there must also be added a verification information stream. This operates in those situations where the primary and parity information sets are not in agreement, necessitating an inquiry to establish the origin of error, and determine what comprises an accurate representation.

This mechanism is clearly seen in the use of evidence and witnesses in judicial courts. In public bureaucratic systems, it takes the form of public inquiries, research studies, and royal commissions.

7. Control/Decision Centre

This is the decision-making centre, which could variously be called, in cybernetic language, the control, regulator, or governor. The critical feature is the model defining the future state of the phenomena, the goal or objective which is the purpose of the system. Correlated to the goal are a number of action sets linked to information sets. For each possible incoming information set, which functions as a representation of the existing social reality, there is an action set, which defines instrumental goals (implicitly defining methods and services) that will effect a response, altering the present phenomena to a new state, which is the desired goal.

Every purposive organization has one or more objectives that can be redefined in terms of value orientations. Terms such as socialist, communist, right wing, liberal, refer to the kind of value orientations which will guide a government in its activities and programs. If we assume these specific value orientations, then the action that will flow from these orientations will be dependent on the organization's knowledge of the current state of affairs, and depending on the correspondence between the present state and the desired state espoused by the value, the action that will be decided upon will vary. Over time an organization will develop in its memory a whole range of value/action sets which had utility in altering one set of conditions to a more desirable set of conditions. On the basis of its experience, the organization learns what kinds of actions are appropriate to what kinds of situations.

In government there is a vast accumulation of value/action sets which correlate to various information sets. As long as these information sets are unchanged, there is little change in programs. In North America there are certain classic information sets, such as "welfare bum" and "drunken Indian". As long as any specific individual is presented within the definition of this information set, the consequential action is very predictable. The question of social justice raises the whole issue of how appropriate the government's information is regarding a particular person or group. This is a current concern among many civil rights organizations, who are alarmed by the increasing personal files maintained by government and financial organizations upon which decisions are made about individuals. If that information is in some way erroneous, then the organizational response will be unjust or at least inappropriate.

In the model, it is assumed that the action set "keyed" to the accurate information set is the only avenue to goal attainment. If an erroneous information set served as the basis of evaluation and matching to the appropriate action set, the consequences would be different than those defined in the control model.

The model outlines three theoretical possibilities:

(1) The control selecting an action set keyed to an erroneous information set (due to an I-T-M deficiency), yielding an unknown, undesired result. In popular language, this possibility would be based on a lack of "understanding".

(2) The control (value model) activating an action set keyed to a reliable representation, resulting in goal attainment (assuming further staging is non-problematic). This is the only pattern in which the decision-making is considered knowledgeable about the social situation.

(3) The control (value model) selects an action which is related to an erroneous information set, which has been deliberately distorted, leading to a result which is unsuccessful for the system's objective. However, in terms of the subversive control/decision centre (see below), the result was anticipated, and attains a desired subversive objective.

The decision/control centre in the model focuses on the information/action process. This model assumes as given issues such as the origin of the values, the operation of memories, and probabilistic selective processes by which information sets are linked strategically to action sets. Deutsch, in the model he has developed,[67] pursues theoretical concepts of memories, selective recall, will, and consciousness which have relevance to the explanation of functioning within this value/action (control) centre.

However, the prime focus of this thesis, information formation, delimits the model, pointing out areas for future development that now remain as assumptions. The theoretical work now underway by neurophysiologists and psychologists to develop cybernetic models of the human brain in the processes of thinking, learning and selecting[68] indicates that the equivalent processes in purposive social organizations will be immensely complex.

8. Alterant/Subversive Centre

The human actors who take part in these functions of transmission and reception are enacting a formal role, which is only one of many roles as part of their human experience. If they alter information for reasons other than incompetence, it is a strategic response to some other role system in which they are engaged. For example, an official may obtain information about the operation of a program which is damaging to his professional reputation or his ethnic grouping. If within his own personal experience, his economic role or his cultural role has priority, he may alter the information to accommodate his own needs, even though it undermines the organizational system's needs.

Alterant/Subversive Process

In order for a subversive actor to successfully manipulate a system, the following conditions are required:

(1) The subversive actor must be knowledgeable about the social situation under examination; that is, there must be a reliable information set.

(2) The goal of the subversive must be clearly defined and a specified action set which will accomplish the subversive system's objective must be selected.

(3) There must be a full comprehension of the formal system's values and correlate goals, including understanding of the various action sets that will be selected relative to the information sets received by the decision-maker.

(4) The subversive, knowing that the formal system acting on the basis of an accurate information set will accomplish purposes undesirable from the perspective of the subversive system, distorts the information set being communicated to the decision-maker so that the selected action set flowing from this distorted image will, unknown to the decision-maker, result in failure for the formal system, but attain the goal of the subversive actor.

In the feedback process, the formal decision-maker would become aware of his failure, but only if the information set he receives during the feedback process is not distorted once more by some subversive actor who participates in one of the information process stages.

The only protection against this information manipulation process is the operation of an independent parity information stream that can detect message mismatch and, if necessary, verify representations. A major exception in the model to this safeguard would be the case of a decision-maker in a formal organization who decides in favor of his personal objectives instead of the organization's objectives. This possibility is usually anticipated in government by certain conflict of interest laws which operate to prevent this type of occurrence.

9. Effector Action Sets

This component of the model represents the "real" activity which results from the system's decisions. Theoretically, it assumes that if the control centre receives an accurate image of the existing social situation (i.e., that the decision-maker is knowledgeable), and if the regulatory process of selecting for each information set the corresponding actions requisite for the attainment of the goal, then the response to the action set will result in a new social situation which was the system's intended objective (this assumes adequate resources).

The model also symbolizes two other action sets. One is the consequence of erroneous information (deficient I-T-M) and therefore the final results are not anticipated. The other set represents action corresponding to a subversive information set, producing unintended consequences for the formal system, but achieving desired results for the subversive value system.

10. Consequences

This element in the model represents the altered social situation which results from the action of the system. This new state, compared against the previous state, defines the degree of success the system has enjoyed in attempting to achieve its goal. If the entire cybernetic cycle (shown later as a complex of four systems) has operated efficiently, then the new state, in the definition of this model, will be the realization of the goal.

This new condition flows back once more through the information processing system, reaching the control/decision centre as a new information set that forms the basis of a new action set decision. This outlines the feedback process, and the capacity of a complex cybernetic system to self-modify, through memory, learning and other operations, by selecting new courses of action.

The above presentation outlines the basic elements in the general cybernetic model that has been developed to enlighten the knowledge formation process in large governmental bureaucracies. In the following chapter, a case study will be discussed to illustrate the utility of the model for describing the bureaucratic process.

The general model outlined in this chapter could be considered the first component of a more expanded complex cybernetic model. This expanded model, which attempts to outline large governmental systems, utilizes the basic general model to build a complex model that incorporates four subsystems, each in itself a cybernetic process focusing on a particular function in a complex organizational process. The functions relate to the four elements implicit in any purposive action: establishing goals, determining implementing strategies, undertaking the work implied in the program, and assessing the response. These four subsystems are designated as follows: the ideo-telic system, the techno-methodological system, the mechanical system, and the respondent system. In Chapters V, VI, VII and VIII, these will be described and discussed using further case histories.

CHAPTER IV

THE MENTAL HEALTH CASE STUDY

In this chapter, the first of a number of case studies will be presented. The mental health case study will be utilized to illustrate the general model, and is therefore more elaborate than subsequent case studies which will illustrate the subsystems. The criteria for selecting the various case studies presented in this thesis, from among many possible illustrative events, included the following:

(1) The utility of the case to serve as a prototypical event, which is not unique but representative of a general class of incidents occurring in governmental processes.

(2) The ability of the case to highlight the significance and utility of the theoretical concepts included in the cybernetic model.

(3) The availability of extensive documentation.

(4) The absence of impropriety in presenting the case: the case discussed relates primarily to public incidents involving a former government administration, and does not knowingly jeopardize any government official, nor violate any confidentiality.

The Phenomena

The social reality which forms the starting point of the mental health case history was the prevailing situation regarding mentally ill patients and the treatment programs in mental health operating in the Province of Alberta during 1966. The entire jurisdiction for mental health programs was under the Division of Mental Health in the Department of Public Health. This Division had legal responsibility for the planning and provision of services to the people of Alberta in regard to treatment and prevention of mental disorders.

The hospital facilities and the patient population consisted of the following:[69]

ACUTE MENTAL HOSPITALS:	
Alberta Hospital, Ponoka	1,029
Alberta Hospital, Edmonton	1,253
CHRONIC MENTAL HOSPITALS:	
Rosehaven, Camrose	484
Alberta Hospital, Claresholm	342
Alberta Hospital, Raymond	117
INSTITUTIONS FOR MENTAL DEFECTIVES, RED DEER:	
Alberta School Hospital	922
Deerhome	1,219
UNIT FOR EMOTIONALLY DISTURBED CHILDREN:	
Linden House, Red Deer	16

The overall total of patients in these institutions was 5,382.

The preventive services program consisted of five Alberta guidance clinics located at Calgary, Edmonton, Lethbridge, Ponoka and Red Deer. The number of cases dealt with by the staff of the guidance clinics, both at their permanent offices and at travelling clinics, totalled 6,195.[70] In addition, the mental health program included the operation of the Eugenics Board which approved 130 cases for surgery under the terms of the Sexual Sterilization Act.

The above information is a summary statement of the scope of the phenomena which will be the focus of this analysis.

The official government objective in the field of mental health, which served as the control for decisions regarding funding and program support, was to maintain a progressive treatment program that compared favorably with therapeutic services operating elsewhere in the country. In the areas of physical health programs, Alberta had one of the highest per capita hospital bed ratios in North America. In both these latter areas, programs were often judged by independent assessment to be the most modern in the country. The government's orientation towards mental health programs was similar in its concern to provide high quality services. This goal was embodied in the Premier's White Paper on Human Resources Development, which stated the following:

> Recognizing that successful human resources development is dependent on the physical and mental health and well-being of the people of Alberta, the Government will:
>
> (a) Continue to develop modern preventive health

> programs and services designed to prevent disease and ill health and to ensure an environment conducive to physical and mental well-being.
>
> (b) Continue to improve its overall health programs in keeping with the most advanced medical knowledge, and progressively provide more and better facilities and skilled personnel for the diagnosis, treatment, care, and rehabilitation of the physically and mentally ill.
>
> (c) Strive to provide for those individuals suffering from permanent physical or mental disabilities, programs for care and training which will stimulate their interest and respect their dignity.[71]

The Premier and the Cabinet each year, in preparation for the Legislative Assembly, would review the situation and act in relation to their understanding of the existing conditions. As will be seen, their primary information source was the Minister of Public Health.

Every year the government presented to the Legislative Assembly a budgetary program outlining the general programs that would be implemented. The value/goal model, summarized in the White Paper statement, described the policy objective or the preferred state of affairs concerning mental health programming, and served as a comparative base against which the information concerning the actual state of affairs was assessed. As noted above, the government's general policy concerning the mentally ill and their treatment was humanistic: the Premier and the Cabinet wished to have a treatment program which was medically advanced, which would bring about a high rate of rehabilitation, and which would be sensitive and humane to those patients who would require long-term institutional care because of chronic disorders. Against this value/goal model, the Department of Public Health provided, in the form of reports and statements, the existing situation, which usually indicated that the real situation was close to the aspirational goal of the government: consequently, governmental decisions and action in this field were composed of conservative changes and slow progressive improvement in budgets and facilities. This action, in the assessment of the Cabinet decision-makers, would close the gap between the actual conditions and the policy objective, and the mental health system would, in the homeostatic sense, once more be at rest. The structural problem in this process of communication was the lack of any verification information. The government decision-makers obtained an information set from one official source, the Minister of Public Health and his senior officials in the Division of Mental Health. The Minister and his Division directors were the only group that had the jurisdictional right to obtain information concerning mental illness and the operation of programs at the level of hospitals and clinics. The Cabinet accepted their reports and messages as a reliable and accurate representation of the real situation in mental health programming. There was no effective mechanism to independently verify the reliability and validity of the Department of Public Health's information. In addition, since the Department effectively controlled the communication process, it also monitored the feedback messages. This created a highly vulnerable situation. The correspondence or lack of correspondence between the representation or information set of what was the real state of phenomena, and the representation or information set which was the basis of decision and action by the Cabinet, was conditional on the reliability of information processing by officials within the Department of Public Health. In this situation, there existed the possibility of the decision-makers (secondary receptors) becoming increasingly removed from the reality of the mental health situation, if the official information channel had a high content of error and distortion.

According to the cybernetic model outlined above, there is no way to check information error or distortion except by the operation of a parity information process. If, for instance, an independent communication process rendered the same information set as the Department of Public Health, then the decision-maker could assume that the information set which was utilized was a high approximate representation of the social reality comprising the mentally ill and their treatment programs.

In late January, 1967, a series of in-depth reports appeared in a major daily newspaper, presenting a devastating analysis of the existing mental health programs, citing numerous critical inadequacies and calling for a total overhaul of the mental health system. As will be outlined later, these reports were backed by many knowledgeable professionals. The question that arises is that if the newspaper analysis was correct, how was it possible for the government to get so "out of touch" with the reality of the mental health situation. To explore this in terms of the cybernetic model, we will review the official information process of the Department of Public Health, then summarize the opposing information set presented by the critics. The case history will then be pursued in terms of a verification channel and the effect of new information on the value/action function of the Executive Council.

The Official Information Channel

The official description regarding mental health programs in 1966 is contained in two publications - Alberta's Health Services Program and the Annual Report of the Department of Public Health. In the first publication, in addition to descriptive data, the following statement is made about the therapeutic program in mental institutions:

> INCREASING NUMBER OF PATIENTS CURED
>
> Upon admission, and following appropriate medical examinations, all patients are placed under active treatment. Such treatment may consist of psychotherapy, occupational therapy, recreational therapy, drug therapy or electrotherapy. A steadily increasing number of patients are leaving the mental institutions recovered or improved to such an extent that they are again able to take their place in the community.
>
> Psychotherapy means treatment consisting of interviews and discussions with the patient. This can be on an individual or group basis, depending on the circumstances of the case. By these means the person is frequently able to understand the basic cause of his difficulty and may then be able to correct it. In hospital treatment the medical and nursing staffs frequently collaborate in using psychotherapy.
>
> Occupational and recreational treatment are parallel services. They are used to distract the patient from

> his worries and to stimulate him toward normal thoughts and a normal way of life. Occupational work includes such things as cabinet making, leather work and other crafts, while recreation includes games, dancing, moving pictures, etc. An attempt is made to keep the patient occupied during all his spare time. In certain cases it may be recommended that a patient do a particular type of work in or around the hospital.
>
> Modern methods of surgical and medical treatment are available for those cases where it is indicated. Various new drugs play an increasingly important part in the treatment of most mental illnesses.
>
> Psychological examinations and Social Service participation prove very helpful in the assessment, treatment and rehabilitation of many patients.[72]

In addition to this statement, the outline mentions that formal research was carried out in the active treatment institutions, that the guidance clinics provided extensive treatment services and that a pilot program for emotionally disturbed children (Linden House at the Alberta School Hospital in Red Deer) had been operating very successfully, but below capacity. In general, this presentation of mental health services indicated that there was a wide range of programs, and professional staff such as psychiatrists, psychologists, social workers and other therapists to provide treatment, and that the philosophy was to enable patients to return to their communities as soon as possible.

In the Annual Report of 1966, the major content is a statistical analysis of patient numbers and case classifications. There is some reference to the shortage of professional staff in guidance clinics, and mention of certain improvements to programs during the preceding year. Capsule reports from each institution contain non-evaluative details, except for a few clauses that indicate staff and facilities were "taxed to the limit".[73] These institutional reports also specifically expressed their appreciation to the Minister of Public Health, Deputy Minister of Public Health, the Director and Assistant Director of the Division of Mental Health, implying cordial relations and close cooperation.

The only summary statement regarding the active treatment hospitals is the following which has a positive tone:

> The treatment program was active and in keeping with current concepts. Both hospitals carried on active out-patient programs, as well as foster home and half-way house placements.[74]

From official published statements, the image was one of many services, some staff shortages, but generally an active program making moderate progress. There was certainly no indication from these reports that the social reality in the mental health treatment programs was the same situation as that described in the newspaper series. In fact, very little information beyond that contained in these short official reports was available.

The Premier and members of the Cabinet depended almost entirely on the Minister of Public Health and his senior officials for assessments of conditions in the mental health programs. A visiting board of three citizens had been operating for many years, but during 1965 and 1966 it did not present reports to the government as was its usual custom. There was an active public interest group, the Canadian Mental Health Association, but this organization did not have access to detailed information about operational programs.

In the thesis model, four stages of message formation have been outlined in the communication process. Given that mental health programs involve thousands of individuals, both as patients and staff, it is noteworthy that at one of these stages information was not streamed into a second parity channel. The possibility of reliable and valid information concerning the state of patient care, quality of therapeutic services, and skills and attitudes of professional staff entering a second communication channel was limited by two factors:

1. The majority of patients suffering from some type of mental illness did not present or articulate their own situation because of two reasons:

a) The nature of certain psychological disorders, which includes severe disorientation, made it impossible for the patients to express in lucid form their experience.

b) Many patients who had completed treatment and returned to their community kept their history of mental illness secret or shared it only with close associates because of the strong stigma that existed in communities toward the mentally ill. The newspaper articles acknowledged this:

> These same people, the former patients, the relatives, have been found to be largely unable to effect changes because of the attitude towards mental illness on the part of society, sometimes including administrators and politicians.
>
> "What does he know about what should be done?" they ask. "After all, he was insane."
>
> But, according to psychiatrists, patients do know, and care, about what conditions they live in and how they are treated.[75]

2. Information was not available to the public from mental hospitals and clinics because of the operational government policy which maintained strict confidentiality regarding patients' case histories and professional management problems.

a) The case histories of individual treatment programs were kept under lock and key and access was classified, and only those having senior responsibility could gain entry to the files. In addition, there was a censorship policy regarding patient communication by mail or telephone, particularly in relation to patients who were categorized as "mentally incompetent". Their messages often contained bizarre and incoherent commentary as well as severe criticisms of staff and treatment programs. To protect family and relatives from the unsettling comments which reflected their illness, the censorship policy achieved a secondary blockage of criticism regarding the state of affairs inside the hospitals and clinics.

b) The professional staff inside mental hospitals and clinics operated under a strict understanding that the problems regarding treatment and hospital operations were not to be discussed with the public, particularly with the press. This fact of staff silence was noted in the newspaper articles:

> ...the staff working with mental patients has not done enough to make their needs, which include the needs and well-being of their charges, known to the public. Too often they have remained out of controversy, intent on maintaining the status quo, and not speaking up, either to the public or to the division.[76]

Given the two general conditions summarized above, there effectively was little possibility of informed comments regarding mental health programming originating outside the Department of Public Health. The reality of mental health programming was effectively hidden from the general public.

At this first stage of image formation, descriptions of the existing situation had to come either from patients or staff because the institutional environment operated as a closed system. The information sets formed by these people were generally only accessible to the Division of Mental Health, which was composed of senior officials operating at departmental headquarters in Edmonton. While viewing the information process as closed, in the strict sense there was not a complete block of information as can be seen from the following abstracts from newspaper articles in 1966:

> A public inquiry into allegations that both patients and employees in mental hospitals are being neglected is demanded by the Alberta Federation of Labor.[77]

> The inquest into the death of a patient at the Red Deer Deerhome hospital has raised as many questions as it has answered. It is the duty of the attorney-general's department to provide those answers. There must be justifiable doubt in the public mind, most

> especially among families and friends of patients in all Alberta mental hospitals. A comprehensive inquiry and report is in order.[78]

> Mental hospitals are a Victorian social anachronism, Dr. Keith I. Pearce, director of psychiatry at Foothills Hospital, Calgary, told a workshop of psychiatric workers Thursday. They are the only medical institutions which have not changed with the times, but are still basically a dumping ground for the mentally ill because they are the easiest and cheapest way for society to get rid of an unpleasant problem.[79]

These specific criticisms were illustrative of the kind of sporadic messages about the mental health situation that occasionally appeared, but there was no comprehensive, organized, independent viewpoint before 1967 that claimed to have knowledge about real conditions in the mental health services. Largely these criticisms were more of a request for an inquiry or examination of some specific problem that had been alleged to exist.

The second stage of information processing in this analysis is represented by the officials within the Division of Mental Health headquarters, who received reports from the hospitals and clinics and, in turn, reported directly to the Minister of Public Health who would function as the primary receptor. From informal reports, senior program officials, both in the form of verbal discussions and written memoranda, requested changes and improvements. These messages were controlled by the Director of the Division of Mental Health, who apparently decided on the basis of an alterant value/goal system (which could include the

Director's own professional security needs) to withhold information from the Minister of Public Health. This was evident in one critical ministerial level meeting. The Minister was informed by a clinic director of a number of long-standing grievances that had been reported earlier and had not yet been resolved. When the Minister asked the Division Director (who was also present at the meeting) whether or not he had been informed of these grievances, the Division Director acknowledged that he had received these serious complaints. When asked by the Minister why he had not been made aware of these, the Director's reply was, "Who am I to criticize the Minister?"[80]

The Minister maintained a policy that staff should not discuss problems outside the Department. This became the central issue in a situation which eventually led the Director of the Edmonton Guidance Clinic to resign his position in protest. Late in 1966, the Minister of Public Health had reactivated the Board of Visitors, a three-member visiting committee that investigated and made recommendations annually to the Minister of Public Health on programs administered by the Department of Public Health. One committee member,[81] wishing further information on guidance clinic operations, held a special meeting with the Director of the Edmonton Guidance Clinic who previously had been asked by the Division to offer cooperation. The Clinic Director provided a written report detailing problems. When the Minister of Public Health received the Board of Visitors' report in late 1966, it contained extensive information drawn from the submission prepared by the Guidance Clinic Director. In response, the Minister summoned the Clinic Director to a meeting attended by the senior departmental officials. At this meeting, the Clinic Director was strongly reprimanded for "disloyalty" in his action of providing the Board of Visitors with information about problems. There was no question regarding his competence, or the legitimacy of his analysis. The Minister and the officials were angry because he had passed information outside the Department. Despite subsequent meetings, the Clinic Director was appalled by their attitude, and in the early part of 1967, he resigned (see later comments).

The Independent Information Channel

The most dramatic event which communicated a very different message about mental health programs was the publication of the above-mentioned series of in-depth articles in the *Edmonton Journal* which appeared in the latter part of January, 1967. While this was the major impetus for a new look, on close analysis it was one of five sets of events that combined to form an overwhelming consensus about the serious situation in mental institutions and clinical programs. These five will be discussed below:

1. A Special Committee on Working Conditions in Health Institutions

In June, 1966, there was an increasing number of complaints from employees working at provincial health institutions, particularly the mental hospitals. The Civil Service Association of Alberta requested an inquiry into the "working conditions" of employees, and a study was established under the authority of the Joint Council, a Cabinet committee having legal status under the Public Service Act. This committee was chaired by the Provincial Treasurer, not the Minister of Public Health. The findings of this study indicated numerous, serious inadequacies. These included problems in the areas of staffing, salaries, training and development, physical working conditions, and delegation of authority. In their summation, the study cited four major findings:

(1) An almost complete lack of understanding between and among employees, supervisors and management.

(2) While efforts to improve patient care were limited by problems in recruiting competent personnel, there were serious frustrations because the skills and knowledge of the existing staff were not properly utilized by the Department of Public Health. This included particularly the existing centralization of administrative authority and the unwillingness to delegate responsibility to institutional officials.

(3) The budgeting policy of appropriating monies through the Department of Public Works meant that basic facilities such as washrooms and lunchrooms were inadequate, and preventive maintenance of existing facilities was deficient.

(4) The personnel programs were inadequate, and there were many grievances in such areas as the hiring processes, promotions, and inadequate job classifications. In addition, there was no planned program in areas such as induction and orientation.

While this report was not made public, it was presented to the Provincial Treasurer, a ranking member of the Cabinet. This report was strongly critical of the existing working conditions in mental hospitals. The committee which produced it, composed of five members from three different organizations, undertook its task in a highly professional manner, which strengthened the legitimacy of the information it was imparting. The study provided an independent, critical perspective at Cabinet level that was outside the control of the Department of Public Health.

2. The Edmonton Journal Series

Beginning January 24, 1967, a journalist[82] began a series of in-depth reports on Alberta's mental health situation. Summarized below are excerpts from those reports, organized under the publishing dates:

> January 24, 1967
>
> Alberta's mental hospitals and mental health facilities lag behind those in other provinces in both

treatment methods and facilities.

In giving mental health services equal status with public health, B.C. appears to be a step further along the way to recognizing the seriousness of the illness and the need to do more about helping those affected by it.

There are the teen-agers, defiant, sometimes psychopathic, with problems stemming from family backgrounds, now thrown in with the masses of long-term and elderly patients.

Oliver, situated just five miles from Edmonton's city limits, has about 1,500 patients, and this number is sure to rise during the winter. Until now, this institution has offered nothing in the way of organized out-patient services, although former patients could return to their doctor for help, but only on a disorganized hit-or-miss basis.

However, Ponoka, also with a shortage of personnel, is more advanced in treatment methods, and is more in touch with what is going on in the mental health field elsewhere. Among the staff, there is more freedom to talk, to exchange views with hospital administrative people, a higher morale, and an apparent dedication to the job of helping patients.

Decisions affecting the hospitals are too often made by the administrative people in Edmonton, who have no contact with the patients, the community, and little with the staff...[83]

January 25, 1967

In Canada, more than half of all hospital beds are occupied by patients with mental disorders. Yet only about six percent of the country's doctors are treating these patients. In Alberta, this percentage appears to be even lower.

Some doctors are caring, if you can use that term, for more than 250 patients each. This doctor shortage, together with shortages of such professional staff as psychologists, social workers, physio-therapists and occupational therapists, means most patients are dependent for any therapy on the nursing staff, student nurses or attendants.

A study...found that 100 graduate nurses at Oliver could give each of the 1,000 male patients less than half an hour of attention each day. On the female wards, where there were only 500 patients, 87 nurses were still only able to provide less than one hour of daily care per patient... According to a study made by the American Hospital Association and the United States Public Health Service, "an average of 4.7 hours of nursing care per day, of which 2.5 hours are provided by professional nurses and 2.2 hours by other nursing personnel," should be provided to each patient.

More than half the members of the social work department at Oliver, which is now without a qualified director, have become disillusioned and...are seeking jobs elsewhere.

Although the medical staff - the doctors and psychiatrists - now are making what they generally feel is a fair salary, it is still possible for a new doctor, with equal training and experience, to come into the service of the mental health division and make more than the man with the same training who has spent years there.

One psychiatrist, a veteran of the civil service, told me, "The way it now is, nobody who is any good or who tries to work toward change, stays very long. They usually decide to move to some area where they can see things developing, or where the channels of communication are more open. There are those who simply get disillusioned after hitting their heads against brick walls, and just stay on, not even trying."

At Ponoka, there is a shortage of about one third of what the nursing staff should be. ... At Oliver, where only one or two of 20 wards have both female and male nurses, there is an even more pronounced shortage with male nurses being in very short supply.

Oliver, in addition to a serious shortage of psychiatrists, has a serious need for other professional staff.⁸⁴

January 26, 1967

All of Alberta's large mental hospitals are faced with a critical shortage of professional staff. But the Mental Health Division, under the Department of Public Health, is thinking mainly about building or improving old facilities. ... Four of Alberta's mental institutions are without their own medical superintendents, and...there are no psychiatrists on staff.

The word is out in Eastern Canada, that Alberta doesn't offer much of a challenge for the young professional thinking of working in the mental health field, one young eastern graduate told me.

The Mental Health Division in Edmonton, located 60 miles from Ponoka, and 10 miles from Oliver, still makes all decisions about the spending of money, the building of facilities, and the hiring of staff far from the scene where the patients are cared for. Until now, it has been seldom that the hospital administrative people and top professional people have been asked to sit in on such decisions as advisors.

Until now there has been little of what we can call a dynamic approach to re-motivating patients at Oliver.

Oliver medical and nursing staff have, in addition to the problem of understaffing, severe overcrowded conditions, and old, impractical buildings to contend with. In some wards there are over 100 patients lining the walls, sitting dejectedly waiting for the day's routine to unfold.

...almost everywhere, I was struck with the inactivity, the hopelessness, and the horrible, never-ending routine. "This hospital is run to serve the staff, not the patients," said one disillusioned male nurse, who admitted he is looking for another job.

But, even so, Alberta has the lowest ratio of psychiatric nurses per patient, compared with the other three: British Columbia, one to 6.3 patients; Saskatchewan, one to 6.9 patients; Manitoba, one to 10.1; and ALBERTA, one to 15.2 patients.

It can readily be seen, in comparison with the standards presented here, and with what is being done in the provinces where a more dynamic approach has been taken to accept mental illness, and to send people back to a normal life after active treatment, Alberta suffers badly.[85]

January 28, 1967

The main thing wrong with Alberta's mental hospitals is the way the provincial government operates them. The public would be appalled if conditions in general hospitals were the same as what is the accepted

> standard in Alberta's mental hospitals.
>
> Last May, the CMHA (Canadian Mental Health Association) presented a concise brief to Dr. J. Donovan Ross, Minister of Public Health, and to officials of the Mental Health Division. ... Almost no action has been taken on any of the concrete recommendations made in the brief, which included requests for citizens' boards for the mental hospitals, and a committee set up to study in detail the mental health services, among many others.
>
> A visiting committee, set up by the provincial government years ago to visit Alberta's institutions and report to the government, is headed by chairman Mrs. C.T. Armstrong of Calgary. ... I asked Dr. Schrag during my interview...if the committee had been instrumental in past years in bringing about changes in mental hospital administration or facilities. He could not point to any concrete action that had resulted... Such a committee, to be effective, should not be under the control of government. It should be free to ask questions, and to spend much more time at each institution than just a mere three or four hours. In the past, any employee who has given too much information, in the view of the division, has been called upon the carpet to explain.
>
> In Alberta, the attitudes of inflexible administrative heads who run the Department of Public Health and the Mental Health Division obviously need changing. Instead of defending themselves, or probing to find out what individuals are behind efforts within the hospitals to make changes, they, personally, need to take a new look at themselves, and at the services and individuals they are supposed to be serving.
>
> No longer should a twentieth century society put up with "human warehousing," as one eminent Canadian psychiatrist called the Victorian attitude of custodial care which we allow in so many of our Alberta institutions.
>
> ...until this "major revamping" is done, Alberta's mental health services will continue to fall sadly behind those of her sister provinces.[86]

These newspaper reports could not be considered a first stage information set. They were based largely on information the reporter had received and therefore they were vulnerable to bias and error on behalf of the former patients and staff who were interviewed. They functioned, however, as a powerful transmitter of a serious message to the reading public, including the decision-makers in the government. These articles stimulated a number of other assessments and commentaries, which collectively formed the third major set of independent information.

3. Professional Organizations and Special Interest Groups

Beginning in the latter part of January, 1967, following the newspaper series and continuing until June, a number of statements and opinions were communicated through the press. They fall into two categories, the first confirming the reliability of the information contained in the newspaper series. They were particularly significant since most of these responses, briefly summarized below, were from professional and occupational groups whose members worked inside the mental health system:

> Canadian Mental Health Association
>
> "They are a true and accurate account of the situation in Alberta as we know it," said the associations's president Glenn S. Brant, in a statement today.[7]
>
> Edmonton Psychiatric Society
>
> With your reporter, Mrs. Karen Harding, we share a deep concern about the mental health services in general and about the Alberta Mental Hospitals in particular. We have felt encouraged by her articles, because we now dare to believe that we are not quite alone in our struggle to improve the mental health

services in this province.[88]

Alberta Association of Registered Nurses

"The association commends Karen Harding for her recent series on the mental health services in Alberta. Her forthright and objective assessment of mental health services further pinpoints the fact that the patient suffering from mental illness does not receive the same excellence of health services as quickly, easily and efficiently as the patient suffering from physical illness."[89]

Liberal Leader

...says he intends to press hard on the mental health question. "I raised the subject three sessions ago and I felt then this was one place where the department of health was weak. I still think so. A recent series on mental health in The Journal has strengthened my thinking,"...[90]

Northern Branch, Alberta Association of Social Workers

The association is aware of and concerned with the glaring inadequacies of the mental health services in Alberta. Mrs. Harding's criticisms are well taken and consistent with our own experiences.[91]

Ponoka Branch, Alberta Hospital School of Nursing Alumni Association

We congratulate both the author and The Journal upon their efforts to stimulate public and professional interest in the subject and wish to point out certain deficiencies still extant. We feel that the approach was objective and generally well-informed - with one or two notable omissions.[92]

Alberta Association of Psychiatric Nurses, Ponoka Branch

The Alberta Association of Psychiatric Nurses, Ponoka branch, has endorsed a recent series of articles in The Journal concerning Alberta's mental health services and hospitals.[93]

These statements, in addition to many letters to the editor, generally confirmed that the reality in the mental health system had been withheld from the public.

There was no specific challenge to the "facts" or assessments presented by the journalist in her first series of articles. In a later article, however, in the same newspaper, on May 20, 1967, a patient's account of her hospital stay as narrated by the journalist and later the facts it contained about physical conditions were refuted by the Dean of Law at the University of Alberta after his personal investigation.[94] What was not refuted however, was the patient's experience of treatment values and emotional despair while in a major mental hospital.

The second category of comments were made up largely of appeals and resolutions. Excerpts are outlined below:

> Alberta Liberal Party Paper
>
> The authors suggest the provincial government is at fault in not having announced any policy on the development of regional mental health centres.
>
> The government is also charged with delaying tactics, in meeting public demands for increased facilities "with announcements of the proposed construction of mental hospitals."[95]
>
> Editorial
>
> There appears to be a genuine need for a reassessment of the provincial government's policies on treatment of the mentally ill.[96]
>
> Alberta Psychiatric Association

The Alberta Psychiatric Association feels there is a need for greater communication between psychiatrists and the provincial government division of mental health.

A letter written by Dr. H.M. Pascoe, past president of the association, said: "Our association does feel there is a need for greater liaison of practising psychiatrists in the province with the mental health division of the provincial government."

The letter also stated the provincial psychiatric association had not been approached to assist in the government planning of Alberta mental health services, although the Calgary group had.[97]

Alberta NDP Convention

Sweeping changes in the mental health field were recommended Saturday in an emergency resolution, approved without debate by the Alberta NDP convention.

The resolution...blamed the Social Credit government and its "unenlightened administration" for the "current inexcusable situation."[98]

Calgary Mental Health Officials

In a meeting semi-closed to the press, with reporters free to interpret discussion but barred from directly attributing any remarks made in it, the Calgary delegation stressed the need for integrating mental health in the broader field of health, to avoid the stigma and isolation long typical of the treatment of mental patients.

They emphasized also the desirability of community involvement, by inviting the participation of local laymen and professionals in the planning and possibly the administration of the new centre.

But as officials of the health department carefully pointed out, this would be a matter of provincial government policy and could not be promised at the meeting.[99]

Canadian Mental Health Association

A mile of signatures is being sought for a petition which the Canadian Mental Health Association branch in

> Calgary plans to present to the provincial government.
>
> Spokesmen for the CMHA here said the 18,000 names required will be sought this Thursday, Friday and Saturday, to emphasize a need for changes in the treatment of Alberta's mentally ill.[100]

These assessments and statements, originating independent of government authority, further undermined the position of the Department of Public Health.

4. Resignation of the Edmonton Guidance Clinic Director

On March 10, 1967, the Director of the provincial guidance clinic in Edmonton confirmed that he had tendered his resignation because he had "lost confidence in the upper echelons of the provincial division of mental health". In a statement to the press, he characterized thinking of some top officials in the Division as "rigid", "stultified" and "conservative".[101] The press report included the following:

> "Maybe I'm too impatient, but there are certain rigidities on the part of some administrators who want to hold back, don't want to try new things. I find it difficult to remain in the civil service in this situation."
>
> But Dr. Van Stolk said he hoped eventually services would improve and that some of the recommendations of the Canadian Mental Health Association would be implemented.[102]

This resignation, which was referred to earlier in this chapter, was widely publicized by the media and gave the impression that many of the other critiques presented to the public during this period contained accurate information.

5. The Board of Visitors' Report

On March 22, 1967, the Board of Visitors, a citizen committee, had their report tabled in the Legislative Assembly.[103] The report, which was highly critical, stated that the Alberta clinic "is sadly understaffed, that the staff turnover is unusally high, and that vacancies at the higher level of staff continue to remain unfilled". In relation to the Alberta Hospital at Oliver, the Board found "inadequate building conditions and deplorable overcrowding", particularly in the infirmary. They found, they stated, many patients who were aged and bedridden and placed in the infirmary "because they are unwanted elsewhere".

Included in the report was the recommendation that the administration of the Edmonton Guidance Clinic be transferred to the Board of the Glenrose Hospital to avoid "numerous and frustrating problems in lines of communication, authority, and administration".

This report, particularly the above stated recommendation it contained, created the image of seriously inadequate services, operated by an incompetent management. It is not surprising that the Department of Public Health reacted earlier to the disclosure of problems at the Edmonton Guidance Clinic as "disloyalty".

The Matching of Official and Parity Information

In the description of the thesis model, it was pointed out that the function of the parity information set is to confirm the accuracy of the information from the initial channel. If there is a mismatch of information, it indicates existence of erroneous or distorted information, and the decision-maker has no certainty on which to proceed with action. From the above discussion regarding descriptions of the mental health situation, the second communication channel provided a picture of the mental health situation which was as critical and devastating, in relation to the official information set, as had confronted the government since the 1950's. If the Premier and the Cabinet were to accept the independent assessments, it would mean their loss of confidence in the reports provided by the Minister of Public Health and his departmental officials. Members of the Cabinet were aware that programs like mental health and penology present special problems, but a number of them were surprised at the serious state of affairs that had been revealed by this new information. For the Minister of Public Health and his Division officials, it was necessary to discredit or at least partially undermine the critics, or to acknowledge either that they no longer were informed about the reality of their own programs, or that Departmental officials withheld information for reasons only explainable in terms of alterant values and goals.

In response to this stream of criticism, the Minister and the officials of the Division of Mental Health acted in three areas to bolster the legitimacy of their presentation of the situation, and to undermine the reliability of the independent groups. These three areas included rebuttals, new program announcements, and information control.

1. Rebuttals

The following are excerpts from reports of four occasions when the Minister and Division officials defended their position, listed according to topic:

> ### Critics Lack Knowledge
>
> In an interview in his office, Dr. Ross indicated that the government was going ahead with the building of a psychiatric hospital and mental health centre in Calgary despite criticisms from some Calgary psychiatrists and the Alberta Mental Health Association, Calgary Branch and Alberta Division.
>
> The health minister was supported in his statements by Dr. P.B. Rose, acting deputy minister of health, and Dr. F.J. Edwards, assistant director of the mental health division.
>
> "This responsibility is the government's," Dr. Ross said, adding, "We have utilized the knowledge within our own department."
>
> Questioned on his report to the legislature earlier this week, Dr. Ross was asked who he felt had "lack of knowledge" about his department which led to what he called "criticism."
>
> He said some members of the Canadian Mental Health Association, Alberta Division "lack knowledge."
>
> "The majority of them are sincere, but there are some within the organization who are there for their own ends," he stated.
>
> Reviewing progress during the past 10 years, Dr. Ross

pointed to "improving of facilities, and expansion of services."

He pointed to the department's visiting board as an example of "our own citizens' board."

The board visits each mental health institution once each year and presents a report to the legislature on its findings.

Asked what specific action had come out of the board's recommendations in past years, Dr. Ross could not point to any specific thing that had been done as a result.[104]

Major Investment in Improvements

Dr. Ross said: "The government has the responsibility to develop programs to meet the needs which are not able to be met, or are not being met, by private services available from the psychiatric wards and the doctors in general hospitals."

Over the past 20 years the government has spent over $30,000,000 to improve facilities in mental health services, Dr. Ross said.

The minister said the province is actively engaged in mental health research.[105]

Changes Advocated are Theory

Many of the changes advocated by some people in the mental health field are "theory and not yet proven by experience," says the director of Alberta's Mental Health Division.

Dr. A.R. Schrag, speaking to about 125 members of the Psychiatric Nurses' Association of Alberta in the Ponoka United Church Hall said there are many questions that must be answered in practical ways before changes are made in the mental health field.

Dr. Schrag said his department was concerned about the welfare of the patients, working conditions and recruitment of staff.

"We know the deficiencies of our hospitals, and we have initiated programs which we hope will alleviate and improve conditions."[106]

Alberta a Leader in Mental Health Care

Dr. Ross said, "Criticism can be made for criticism's sake. It is certainly true that there are many problems to be overcome."

But he added "without equivocation" that government health programs have established Alberta as one of the leading provinces in mental health care.

"We are not in the dark ages," he said. "There has been a great deal of progress in the field of mental health."[107]

2. New Program Announcements

A second area of defensive response and image building was the announcement in the spring of 1967 of major new programs, summarized below:

Six Million Dollar Community Mental Health Centre in Calgary

In the Speech from the Throne in February, 1967, an early start on a community mental health centre was promised as part of a major provincial program of modernization and expansion of mental health facilities.[108]

Vocational and Rehabilitation Research Institute for Mentally Handicapped

Canadian history in the field of treating the mentally handicapped will be made in the fall of 1968 when a new vocational and rehabilitation research institute will be completed in Calgary.

The provincial government has agreed to contribute $1,180,000 towards the project, to be located on a five acre site in the U of C research district north of the campus.[109]

New Buildings at Alberta Hospital, Oliver

This announcement of new facilities was reported in the newspaper as follows:

> A new admission building and an infirmary are scheduled for construction at the Alberta Hospital, Edmonton.
>
> Health Minister Dr. J. Donovan Ross revealed the plans in an hour-long discussion of the mental health division in the legislature Tuesday afternoon.
>
> The admissions centre will be for new patients and acute treatment beds while the infirmary will be for the older, senile, long-term patients and those who need physical nursing care.[110]

This announcement of facility improvements particularly points out the apparently desperate need of the Department of Public Health to give the appearance of having engaged in long-term planning.

The $3 million infirmary is an excellent illustration. Originally this building was designed to improve the treatment program at the Ponoka hospital. The architect who developed the design utilized a consultative process that involved spending a great deal of time at Ponoka observing patient needs, holding discussions with staff who would use the facility, and attending mental health workshops to capture the philosophy of treatment. This all was incorporated into a hospital design that would serve geriatric and other physically disabled patients. The architecture of this facility was a specific response to the Ponoka situation, and when the design was completed, the

Director of the Mental Health Division was highly critical, in part because the ratio of patient space to public reception space favoured the patients. The project was shelved indefinitely.[111]

A number of months later, when the criticisms about the programs at Oliver became acute, the Department of Public Health instructed the Department of Public Works to reactivate this hospital project, except that it was to be built at Oliver instead of Ponoka, with a minimum of modifications. Because of the profile of land and buildings at Oliver, the blueprints had to be inversed. A few modifications were made to floor plans, and the architect was asked to remove all signage referring to Ponoka, replacing the name Oliver. This essentially described the special efforts that went into a major hospital addition at the Oliver grounds - there was no in-depth planning. The public never became aware of this, and few government leaders ever realized the hasty change that was made. This was presented, however, as evidence of the Division of Mental Health's ongoing plans for improvements at Oliver.

3. Information Control

The third area of reaction to criticism was the tightening of information control by the Minister, which essentially was a form of censorship. This expressed itself in a number of ways, including the three actions mentioned below:

(1) The Minister gave specific instructions to senior hospital

staff not to talk with members of the press.[112]

(2) The Minister himself became very abrupt with newspaper reporters, illustrated by the following incident:

> A reporter from a Calgary newspaper was taken aback when she approached the minister for comment on the province's mental health programs.
>
> "I will only answer three questions," he told her, "and I won't tell you anything about the mental health clinic at Calgary or the plans of the government."[113]

(3) The Director of the Division of Mental Health sent a directive to the Alberta Hospital, Ponoka, forbidding the Psychiatric Nurses Association of Alberta from using hospital property for a seminar at which the former Director of the Edmonton Guidance Clinic, who had resigned because he had lost confidence in the Division, was scheduled to be the guest speaker. The press report stated:

> "We have been told by the hospital administration we can hold our meeting but the department doesn't like our speaker," Mr. James said.
>
> The letter said Health Minister Dr. J. Donovan Ross had learned Dr. Van Stolk was to speak.
>
> He instructed Dr. Schrag to write that the minister did not think the meeting should be held at Ponoka.[114]

On October 7, 1967, the Minister admitted publicly that the former Clinic Director was not welcome on government property. A further article reported the following interview with the Minister:

> "This person," he said, referring to Dr. Van Stolk, "resigned from the service several months ago. As far

> as I am concerned, any further dealings he has with the mental health facilities in the province would not be in the best interests of the staff."
>
> Dr. Ross insisted he had the right to ban people from hospital facilities.
>
> "If there are people I feel I don't want on the premises, I have the right to make decisions and give directions."
>
> Dr. Ross refused to say why he would not permit Dr. Van Stolk on hospital property.
>
> "I don't feel I have to give my reasons," he said. "I have my reasons for not permitting it."[115]

There was severe editorial criticism directed toward the Minister by the media, but the Minister persisted. In response, the Nurses Association went ahead with their annual seminar, but moved the location to the Ponoka United Church which was outside government property. As it turned out, the former Clinic Director's speech was scholarly and sensitive, focusing on relationships between adults and children. Nevertheless, the image created by this incident heightened public suspicions about operations inside mental hospitals.

We have now reviewed an official information set, an opposing information set which has a parity function, and reactions by the official organization which attempted to undermine the criticisms, and reactions. From a theoretical perspective the decision-makers confronted with these two mismatching representations about the mental health situation were in a difficult position to act decisively. In the model, resolution to this situation requires an information verification process.

In relation to this mental health case study, when impressive counter information began to emerge, a third set of activities started, with the objective of determining what in fact was the reality of the mental health situation. This will now be briefly reviewed.

Following the in-depth series of articles and the subsequent support of its criticisms by responsible professional groups, the Coordinator of Human Resources Research & Development for the Executive Council sent a confidential memorandum to the Premier, which included the following comments:

> You will recall that in mid-January, before the outset of Karen Harding's Edmonton Journal articles criticizing mental health services in Alberta, I briefly expressed concern regarding the mental health situation and mentioned that I would be preparing a memorandum for you on this matter. Through further reading and discussion with professional people since that time, what was originally intended as a general memorandum has crystallized into a proposal for a comprehensive study of Alberta's mental health resources and needs. I felt some reluctance in preparing this proposal, since there is a common charge these days that there too many studies and not enough action; yet, there are many indications that the mental health situation requires deeper analysis and reform before the government can be satisfied it has an adequate and comprehensive mental health program in Alberta. To evaluate the merit of this proposal, I discussed the matter with Mr. Aalborg, who expressed interest in a comprehensive study, and agreed that a proposal should be forwarded for consideration. This proposal has not yet been discussed with Dr. Ross.
>
> The following considerations form the background of this proposal:

> 1. Criticisms concerning mental health services, which have accelerated and become increasingly widespread during the past two years, have been given recent and emphatic expression in Karen Harding's articles. It is significant that these articles have found great support among our mental health personnel, and that they have also clarified and summarized a vulnerable area of government services for opposition parties. It is doubtful that criticism will lessen under present circumstances.
>
> 2. The morale of personnel in the mental hospitals and clinics is generally unwholesome. Efforts which should be primarily utilized on behalf of the patient is often expended in expressing dissatisfaction and frustration. The present employment atmosphere is not conducive to retaining or attracting more qualified personnel. Staff view with pessimism any suggestion that conditions will significantly change.
>
> 3. Present efforts by the Department of Health to improve its mental health program appear partially defensive and inadequate. Many senior personnel involved in various mental health services are not yet confident that sufficient attention and study are being focused on problems critical to comprehensive, long-range planning. The impression remains that planning for mental health services is neither competent nor excellent. The Department of Health's reassignment of Mr. Glen Smiley to investigate problems is a helpful but not adequate measure to assess the total problem. In addition, the still apparent stress on physical facilities and capital development does not cope with serious problems relating to administration, treatment services, adequate personnel, and employment incentives.
>
> 4. Of all the people who receive government services, the mentally ill are most helpless to articulate their needs and comment on their care. It is therefore incumbent upon a government deeply concerned with the rights and dignity of individuals to remain especially sensitive to the needs of individuals suffering mental illness, and to continually assess the adequacy and quality of service in this area.[116]

The object of the study was to (1) provide an objective province-wide (a) assessment of resources for maintaining mental health, and (b) evaluation of needs for treating mental illness;

and (2) make recommendations for the development of a comprehensive, integrated and effective program for (a) the diagnosis, treatment, care and rehabilitation of the mentally ill, and (b) the prevention of mental illness in Alberta. To insure the objectivity of this study it was suggested that it operate outside government departments and that it be headed by an independent research director. In order to obtain a comprehensive view, the following groups were included in the initial design of the study proposal:

(1) Division of Mental Health.

(2) Visiting consultants who were renowned authorities in the field of mental health.

(3) Special committees of qualified Albertans to study specific areas of concern.

(4) Submissions from interested individuals and groups.

(5) Public Hearings.

The Premier and the Cabinet gave internal approval to the implementation of this study, and the Coordinator invited a highly respected psychologist to serve as study director. A psychologist was preferred as director over a medical doctor or a psychiatrist for the following two reasons:

(1) The social-psychological research background of a psychologist was considered to be more general than that of a professional trained in the medical tradition.

(2) It was felt that the medical profession is a close fraternity and the possibility of a medically-oriented director

maintaining broad objectivity might be difficult in the assessment of programs that had always been headed by medical graduates.

These concerns related to the need for an open and completely objective assessment of existing conditions. Details were arranged over the succeeding months, and on November 24, 1967, an official press conference was held by the Premier of Alberta and the Minister of Public Health, announcing the implementation of a mental health study.

The Mental Health Study was completed in 1969. In its final form, the Study involved eleven special study groups (comprising 62 professional members); eight outside consultants; visits by the Director and his representatives to mental health programs in other Canadian provinces, the United States and Europe; the submission of over 200 briefs; and public hearings in five cities.

The Study was comprehensive, investigating every significant area of mental health programming, and welcoming information from all individuals and groups, to the extent of accepting confidential briefs.

The final report was published in two volumes, containing major findings and conclusions, as well as major briefs submitted during the Study period.

In terms of developing information about the original social phenomena, the mental health programs and services, the Study was very thorough, dealing not only with physical-type problems, but extensively with treatment values and the emotional environment of programming.

The findings of the Study provided verification information.* The fact that there were 189 formal recommendations contained in the final report is itself commentary about the many deficiencies found in the mental health system. While it is not possible to discuss in detail all the findings in the study, excerpts will be listed below according to specific topics:

> Oliver Hospital
>
> ... The committee saw evidence of seriously overloaded facilities being further stressed by the admission of many different types of medical and social problems, which would have been better dealt with at the source or at other health care levels.
>
> One particular problem made a deep impression and highlighted the lack of cooperation and communication between two Divisions of the Department of Health. Large numbers of alcoholics were being consigned (in June) to this understaffed and physically inadequate institution, while only one miles away the luxurious and very adequate facilities of the Alcoholism Division unit at Henwood were 90% empty and unused.
>
> The Alberta Hospital (Oliver) suffers to a serious extent from an administrative problem found to be quite general in those institutions visited by the committee which are administered by the Division of Mental Health. The remoteness and apparent inflexibility of the central administration have produced negative effects on morale, efficiency and recruiting. In fact, the situation was sufficiently severe as to be interpreted frequently by those in the field as a lack of concern on the part of the central administration.

A nucleus of clearly dedicated staff was found at Alberta Hospital (Oliver), although smaller in relative numbers than at other institutions. The committee was concerned that these individuals were overwhelmed by the magnitude of their task. Poor physical facilities, gross staff shortages in every category, and undue service pressures within, combined with what was perceived as unfair criticism and administrative obstruction from without, had created an intolerable burden. It is clear that major remedial action is required to refinforce the staff and to lighten their impossible load.

In every area examined, other than dietary, the standard of patient care at Oliver was found to be quite unacceptable. ...[117]

Ponoka Hospital

The committee concluded that, given sufficient support, this institution was strong enough to markedly upgrade the level of patient care and to deal with such lasting problems as its distance from the areas it serves and the consequent need to develop a new role beyond that of a regional mental hospital.[118]

Claresholm Hospital

Although the physical facilities at this institution are adequate, the level of patient care is well below acceptable standards.[119]

Alberta School Hospital, Red Deer

One primary problem of the institution appears to be the lack of trained staff.[120]

Patient Care Summary

(1) It is considered that a majority of the problems encountered in this examination stem directly or indirectly from an inappropriate administrative system, which is so strongly centralized that it could not respond to local problems even with an adequate budget. To make matters worse the budget is inadequate, according to the published information on the per diem costs for institutionalized patients.

(2) The large patient population in governmental

institutions are undergoing treatment with drugs. They also become ill and require medical or surgical attention. The committee considers that the laboratory, radiology, and general medical facilities are inadequate for an acceptable standard of care with those circumstances in mind.

(3) Control and review of drug administration is inadequate when consideration is given to drug error and effects.

(4) Hospitalization is usually merely a phase in mental illness. Communication must be provided, therefore, between those providing hospital care and those responsible outside for continuing care. Current communication is inadequate.

(5) In no government institution did the committee find adequate numbers of sufficiently well trained personnel in any category to carry on a reasonable therapeutic program.[121]

Delivery Systems

(1) Mental health and physical health services are organized and provided separately and illogically.

(2) The division of health services into those two parts is uneconomical, unscientific and unfair, in that it impedes the optimum use of all talent in the total delivery system...

(3) The present system...has simply grown, not according to any systematic, long-range plan, not well based on reliable data concerning population trends and the incidence of illness, and not taking adequate account of the impact on the management of mental illness of drugs introduced years ago. The solution to mental health problems in Alberta for a long time has been to provide more mental hospital beds. Other possible, scientifically justifiable and socially more desirable courses of action appear to have been regarded as outside the narrow frame of reference of the Division of Mental Health.

(4) There would appear to be an almost total lack of effective, two-way communication between elements of the Department of Health...between the Department of Health and other health-related departments and their field staffs (Education, Welfare, etc.); between the Department of Health and the communities it serves; and between government mental hospitals and medical

doctors in the communities.

A few examples will be cited. The planning of "community mental health centres" for Calgary and Lethbridge was done without sufficient discussion of local points of view; in particular, reasons for opposing views were not examined with enough care. Although there is also some support for such centres, in the view of Study members the concept is simply outmoded. Notwithstanding the expressed opposition, some persons in authority almost appear to have said, "We'll tell you what is good for you and that is what you will get."

(5) ... Many people have tried to make improvements within the existing system. ... These positive developments, however, are negligible when compared with the serious, basic and numerous deficiencies. These deficiencies are resulting in a "bad name" for Alberta's health services which will make it difficult to attract and retain professional personnel of high calibre. Albertans should be deeply grateful to those who continue to serve in a poor system.[122]

Manpower

The number of psychiatrists in the Province of Alberta at the present time is 51. The ratio of psychiatrist to population per 1,000 is 1:30. The present ratio in Canada at large is 1:22. The ratio recommended by the Royal College is 1:15, (Kerr, 1967). Thus, Alberta falls far below the present national ratio and is one-half of the recommended ratio.

Patients in the mental hospitals receive only a small fraction of the care from psychiatrists that the same kind of patients receive in the psychiatric departments of general hospitals. For example, the 110 psychiatric patients in the general hospitals of Edmonton at any one time are attended by 19 psychiatrists, while for the care of the 1,200 patients there the Alberta (Mental) Hospital, Edmonton has been able to employ only 3. ...

The scarcity of psychologists, qualified to work in these clinical settings, had led to the employment of inadequately trained personnel as substitutes in a number of psychology positions. In the Provincial mental health facilities, for example, there are 49 personnel filling "psychologist" positions but, of these, only 10 are qualified.

A conservative estimate of the need for qualified social workers to staff the Mental Hospitals and Guidance Clinics of the Division of Mental Health at their present level of operation would be 35, more than double the present number, provided that an equal number of social work aides were employed to work with them. The greatest proportional need for social workers is at the two mental hospitals, where only two qualified social workers are presently employed at one and none at the other. ...

At the mental hospitals there is a serious manpower shortage for psychiatric nursing. Not only is there a great shortage in numbers of nurses but also a great inadequacy of appropriate training. In a study undertaken at the Alberta Hospital, Edmonton, in December, 1965, it was shown that a safe level of nursing care on the average on each ward unit would be 2.5 hours of care per day. This figure was in accord with the recommendations of the American Hospital Association and the United States Public Health Service. But at the time of this study the number of professional nursing personnel could provide only 1.4 hours of care per patient per day. ...[123]

Diagnosis and Treatment

As observed, and as described by the Division, treatment methods, generally, within provincial mental health services are simply behind the times. There is no mention, and apparently little use, of milieu therapy and none of behavior therapy, the two most promising methods of treatment available today. Staffs in Alberta are not being trained in those techniques. Moreover, apart from a few notable cases, innovation is absent in the provincial hospital treatment approaches, which were observed.[124]

Research

The committee is seriously concerned about the relative absence of mental health research in the Province of Alberta and the unfortunate implications this absence has on the mental health services of the Province.

In the period 1966-68, Alberta ranked seventh of the ten provinces (ahead of Quebec, Newfoundland and New Brunswick) in terms of the amount of research support (in dollars per capita and as a percentage of net revenue) for mental health from the Federal Government

> under the National Health Grants program. Alberta was also seventh in terms of absolute dollars of research support received. For comparison, during this period, when the Federal Government gave over $1,500,000 in support of mental health research, Alberta received $92,810 while our neighbouring provinces, British Columbia and Saskatchewan, received $279,300 and $216,550 respectively.
>
> ... The Research Committee feels that there are at least three reasons for this failure:
>
> (1) The Provincial Deputy Minister's refusal to forward to Ottawa, for consideration, grants which have been received by him from researchers in the Province of Alberta. ...
>
> (2) Many researchers in the Province, who are both trained and experienced in doing mental health research, have been discouraged by what they classify as the Provincial Government's negative attitude to mental health research. ...
>
> (3) The bitterness and disillusionment expressed by research workers to this Committee have unfortunately also been expressed to their colleagues at professional meetings, etc., with a result that Alberta is probably developing a reputation in Canada as a backward province in the area of mental health and certainly not a place to go if one is interested in doing research in mental health.[125]

The above statements represent some of the significant findings of the Mental Health Study. In relation to the two earlier discussed information streams, it is obvious that the results of this major, objective assessment generally verified the information set provided by the independent stream of criticism. The study conclusively demolished the image that had been presented and defended by the Department of Public Health.

In terms of the cybernetic model, the information on which the government has traditionally based its decisions and actions in the mental health field has been revealed as a reliable representation of the real circumstances in the mental health system. The decision control centre, the Premier and the Cabinet, was placed in a position where the affirmation of its previously stated objectives now required a complete reassessment of earlier decisions and action programs, and the establishment of a new action set that would more effectively bring the desired goal of a modern preventive and rehabilitative system of programs and services.

The information fed back by the verification process, which matched the information provided by the parity stream, now functioned as the official information base for a new set of activity. Among the new actions undertaken, the most immediate and significant was the cancellation of the plan to construct a six-to-eight-million-dollar community mental health centre in Calgary (which the study members judged to be another mental hospital under a different name).[126] This was a significant indicator of the impact of the new information, since over $400,000 had already been spent on architectural drawings, and the building was ready to go to tender. Other actions responding to the new feedback were:

> (1) The development of general hospitals, as the major hospital-treatment facility in the case of mental illness, was started. An order-in-council was handed down in 1970 making it mandatory that mental patients be admitted for treatment at general hospitals. The Government undertook to provide psychiatric beds at the hospitals and review panels.
>
> (2) The formation of regional councils and other coordinating mechanisms was encouraged by the new Minister through financial and organizational

assistance. The Calgary and District Council was widely representative of the professions, facilities, associations and agencies concerned with mental health programs.

(3) In recognition of the need for facilities for the treatment of emotionally disturbed children south of Red Deer, funds for Woods Christian Home, earlier an orphanage, were provided by the Government to develop it as a treatment center.

(4) Patient populations at the two "active treatment" mental hospitals were reduced, slowly at first and then at an increasing rate as alternative accommodation was made available. The reduction, accomplished before the change of governments, amounted to more than one quarter and the populations began to approach manageable size.

(5) Research into mental health problems, reported to be an urgent need following the Study, began to receive attention under the same Government. During the years 1967 and 1968 the Director of the Division of Mental Health was provided with only $10,000 for that kind of research (Volume I, p. 316). On July 1, 1970, the Alberta Human Behavior Research Unit was established by the University and the Alberta Human Resources Research Council, with financial support from the Government. In its first full year of operations the Unit had a budget of $100,000 and significant contributions to a neglected area of mental health appeared to be possible for the first time.[127]

* * *

Conclusion

The above case history dealing with mental health programming has been presented to assess the utility of the cybernetic model. By focusing on the elements of information control and knowledge formation, a complex government issue has been given coherent analysis and a bureaucratic process has been sufficiently elucidated to legitimate a cybernetic approach.

This case sensitizes the analyst to the power of information control, and the critical relationship between knowledge formation and subsequent action. The case clearly illustrates a key element in the model - the necessity of a parity check mechanism to determine the fidelity of information sets. If this yields an information mismatch, then an information verification process will be required to help overcome the errors and distortion that hinder accurate understanding.

The mental health case analysis also indicates factors that operate to block and manipulate information flowing through the communication stages. The perspective provided by the cybernetic model, applied to other governmental program sectors, would focus attention on critical control processes that are never made explicit in traditional, hierarchical power-flow analyses.

The mental health case history provided an opportunity to explore many of the major conceptual elements in the general model. These elements will now be utilized in the analyses of the four subsystems comprising the expanded complex cybernetic model of the governmental process.

CHAPTER V

THE IDEO-TELIC SYSTEM

In this chapter, the ideo-telic system, which functions as one of four subsystems in the expanded model, will be analyzed in terms of cybernetic concepts relating to the thesis model. Since the preceding chapter dealt with the mental health case history, which essentially related to issues concerning the ideo-telic process, no new major case history will be incorporated in this chapter. Illustrative material dealing with human resources programs in the Government of Alberta will be used.

Definition

The synthetic term "ideo-telic", based on the concepts of "ideology" and "teleology", recognizes that formal, complex organizations are created or exist to realize certain goals which are the expression of chosen doctrines or valued ideas. The "ideo-telic" system, in the framework of this model, is that component of a complex organization which processes information and makes decisions relating to the objectives, goals, policies and direction of the organization. In a cybernetic sense, it "steers" the activity toward a specific accomplishment.

The field of phenomena to which the ideo-telic system directs its attention is the sector of social reality it attempts to alter or control. In this thesis, the illustrative material is drawn from the governmental sector, where the Cabinet and policy advisors function as the ideo-telic system. In other sectors, for example, the operational counterparts could be the Board of Directors of a corporation, the High Command of an army, or the Bishops Council of an episcopal church.

In the model, it will be noted that the selected phenomena of the ideo-telic system are comprised of the actions emerging from the respondent system. The cybernetic loop is completed in this complex system when the ideo-telic system, having defined as its objective some altered state of the phenomena, and having put into effect actions which cycle through the other three systems, measures or assesses the reactions of the response system (which defines the resultant altered state) to determine the approximate fit between the goal and the consequences. This new state of the phenomena then serves as the starting point of another cybernetic loop.

If we say that a bureaucratic system, in our case the governmental system, is purposive, we mean that there are formal goals and objectives for which the organization exists. In a government, these are defined by the Executive Council as desirable conditions or events which are the objects of future achievement. The policies, embedded in legislative enactments, can be described. For example, if a government wishes to reduce unemployment it can define a future manpower state that accomplishes this goal. The definition of this new condition is essentially an information set, describing an altered state of social phenomena in terms of facts, values and feelings. This objective is implemented through various social and economic policies and the results come back in terms of another information set. If one assumes that the information is reliable, then the matching of the results (information set C) with the desired objectives (information set B) in relation to the original situation (information set A) will indicate the degree to which the objective has been accomplished and the extent to which the original condition of unemployment has been lessened. As soon as the possibility of information error is introduced into this cybernetic loop, then the definition of the original condition and the description of the results are both questionable. The whole process is marked by uncertainty if the socio-economic phenomenon of employment is not based on accurate information and complete knowledge at the outset.

1. Time Problem

The Executive Council, or to use its popular designation, the Cabinet, is the prime decision-making centre in Canadian provincial governments. Even acknowledging the ratification and law-making function of Legislative Assemblies, the Premier and his ministers essentially operate as the control centre.

The active members of the Executive Council often work an average of 60 hours a week. An analysis of their activities reveals a combination of the following:

(1) Delegation meetings in which interest groups, citizens and constituents inform the minister of their situation, and advocate remedial programs or lobby for change in decisions.

(2) Cabinet and committee meetings, where issues and problems are officially discussed, debated and decisions finalized.

(3) Advisory and consultative meetings, where members of the ministerial staff or senior department officials review reports, brief the minister on problematic developments under his jurisdiction, or discuss future programs.

(4) Official and diplomatic functions, usually involving speech-making (opening of new institutions, community tours, high school graduations, special anniversaries, etc.). Commentary both to and from the minister on these occasions is usually laudatory, nearly always courteous, and seldom the source of specific critical opinion.

(5) Party functions, including provincial and local constituency meetings, where policies and programs are assessed in political terms, and political errors, liabilities and corrective strategies are reviewed.

(6) Reading some reports, prepared summaries, and press reviews.

(7) Attending and debating as a member of the legislative Assembly.

This analysis leads to the following observations:

(1) The all-encompassing activity of Cabinet members is

information exchange. Little time is available for personal experience of operational programs and services under their jurisdiction. They are unaware of many activities at the field level, where citizens actually receive services.

(2) A significant amount of information comes in verbal form, which is effective for expression of values and feelings, but is inefficient for communicating detailed empirical fact. Since personal memory is the general information storage mechanism during talks (this assumes the absence of tape recording), many facts are lost, although value and emotional impressions remain.

(3) Time to read printed reports, the preferred media for social scientific information, is severely limited. Many ministers demand one- and two-page summaries, regardless of the topic, and welcome charts and audio-visual presentations, which allow expanded sensory involvement. This tendency towards a "hieroglyphic style", combined with few hours for in-depth reading, is a significant factor in information loss. To illustrate this observation, some ranking ministers were unable to allocate more than an average of six reading hours per week to research reports prepared for Cabinet members. A prime illustration is the Community Opportunity Assessment study, the major inquiry into poverty referred to elsewhere in this thesis, which contained 1,200 pages. Allowing an accepted comprehensive reading speed of 20 pages per hour, it would require 60 hours to cover the report. Understandably (but regretable for the acquisition of new knowledge), not one member of the Cabinet acknowledged reading the entire report. This lack of time to

study reports becomes extremely critical when it is realized that the above study was only one of many reports continually being presented to government leaders.

(4) Cabinet ministers function on the basis of summary information. Not only does this entail severe information loss, but dependency on those individuals who select the information and determine the content that will form the ministers' views.

Most individuals do not appreciate the extensive demands made on government leaders, nor are they aware of social structures that emerge to limit open access to leaders. From the discussion above, the well-informed, knowledgeable minister who has the time and energy to remain aware of all the activities that are under his jurisdiction, is an exception. For a delegation to leave a well-documented, comprehensive report for personal study by Cabinet ministers would be a questionable strategy: it would be more realistic to prepare a report, read the highlights, and verbally stress the major conclusions, for the probability that a minister will read a complete report left after the delegation departs is generally very low. If new information is to be imparted, the best hope is to revert to verbal form.

The quantity of written information contained in most reports is not inappropriate for the complex issues represented, but the Cabinet members are unable to respond. Each year, as the government increases in size, and information about human affairs expands, this "information-overload" syndrome becomes more severe. The employment of consultants and executive assistants creates an artificial expansion of the ministers' information handling capacity, but these efforts are not sufficiently significant in size or function to appreciably alter the knowledge crisis related to printed reports and studies.

2. Intelligence Problem

If a governmental system is committed to integrating and coordinating its laws, programs and services, then each additional element that must be considered in decision-making increases the requirements of intelligence, time and memory needed by the ideo-telic control/decision centre for adequate knowledge. This principle is demonstrated simply enough by cross-impact grids and multivariate analysis. Each new factor entering the information set demands a significant increase in analysis.

If a mathematical formulation is illustrative, every linear increase in the factors entering the information set of the decision centre yields an exponential increase in possible interaction patterns. If four elements yield 24 possible relationships, five elements yield 120 interaction sets, and six elements yield a possible 720 combinations, then, given equivalent capacity, an ideo-telic system dealing with limited phenomena (the mayor and council of a small town) could be expected to yield more appropriate decisions, and experience greater success, than an ideo-telic system engaged in a complex situation, such as the Premier and Cabinet of a large province.

Though not to be taken literally, these mathematical formulations point out the increasing complex consequences of expanding government jurisdictions and programs, while maintaining relatively slow-changing, conservative information systems and decision-making mechanisms (such as has been the history of Canadian governmental systems).

The propensities of certain political ideologies, particularly socialism, to continually expand the jurisdiction and operational power of government, through nationalization of traditional private sector industries and absorption of social services provided in past times by family, churches and voluntary community organizations, results in increasing pressures upon the government's communication and decision-making processes. Each new jurisdiction places more demands on the Premier and the ministers, but no corollary restructuring or increase in decision-making capacity occurs.

This seems to be a major basis for the popular notion of government inefficiency. The complexity of the phenomena increases and the intelligence, time and memory demands increase, slowing down the traditional decision process - yet the incidence of social problems, due to the increasingly complex interaction networks, appear to be accelerating. The issue is not the competence or incompetence of individuals, but the formation and organization of knowledge and subsequent action. Yet despite this information and decision overburden, there is a "lemming-like" character to contempory citizens' increasing acceptance of, or resignation to, the increasing size of government, and the continuing takeover of private and local level projects and programs.

Knowledge by governmental leaders or specialists is partial at best, focused only on those activity patterns that concern them, and unaware of other consequences emerging as a result of overlapping and competing regulations and programs. To understand this phenomenon, the famous electrical blackout of 1966 in Ontario and New York is illustrative. The complexity of the network design inadvertently included by random logic another network, that was triggered by the failure of an inexpensive switch in Ontario.[128] This demonstrates that with increasing complexity in interacting systems, the probability of creating unknown potential networks increases significantly. Except by simulated models, which is nearly an impossibility in social affairs, given the present primitive state of our social indicators, there is no way of anticipating consequences that flow from unintended networks of activity.

Even at a less sophisticated level, the possibility of general awareness by government leaders is problematic. A senior, experienced Cabinet minister in the Social Credit administration of Alberta said it was nearly impossible to be aware of all the activities and operations of his own department. But not only was it publicly assumed that he controlled his department, but he also felt obligated to respond intelligently and knowledgeably at Cabinet meetings to proposals emanating from approximately 20 other ministers, each in charge of enormous administrative programs. Sartori, in his analysis of the French governmental system, also identifies the scope of the phenomena as critical:

> Whether we ask if parliament controls the government, or the parties control parliament, or a presidential system is needed, the fact remains that essential sectors and entire spheres of power escape all control; the fact is that the very size of the object to be controlled threatens to overwhelm the controller, and the bureaucratic state's elephantism escapes the control of the democratic state more and more merely by virtue of its dimensions.[129]

3. Memory Problem

The complexity of contemporary public agencies, bureaus and programs that function to serve a society has become so enormous that it defies the memory capacity of any individual to be comprehensively informed. For example, a project was undertaken in 1966 by the Government of Alberta to develop an inventory of all formal programs and projects offering services to individuals and communities in Alberta. Criteria for inclusion in the inventory specified either a full-time staff or a formal budget allocation. The inventory outlined federal, provincial, municipal and non-profit public agencies (Red Cross Society, YMCA, etc.), and eventually filled six volumes, containing over 900 different programs (and this listing was not entirely comprehensive). This was the last attempt in Alberta to develop an entire inventory. Who then, can grasp the entire range of activities in this modern system, dominated by hundreds of agencies and projects in a vast, complex bureaucratic system? Ministers and senior officials only focus on their own area of jurisdiction, with minimal efforts to relate and coordinate with other areas. More seriously, in a federal system, such as Canada's, each level of government only attends to its own legal domain, and within these, only the senior Councils or offices (Prime Minister, Premier, Mayor) have the obligation to maintain a comprehensive view of their own system.

In reality, there is no one, or no existing centre, that is knowledgeable about the total system of governmental activities. Nor, given its increasing complexity, is it humanly possible to have full comprehension. The governmental, bureaucratic system that dominates society is now mindless, in the sense that no cognition centre or "brain" grasps its totality.

A more appropriate model than that of an wholistic organism would be that of a cell colony whose elements interact semi-autonomously in a common sphere, experiencing a succession of crises precipitated by random dysfunctional interactions (e.g. inflation) which seem to defy explanation or resolution.

Information Distortion

The second major source of deficient information formation in the ideo-telic system results from information distortion or manipulation. As discussed earlier, individuals or groups, particularly the "gatekeepers" identified by Easton,[130] can control the information set flowing to the terminal receptors when they are in a position to monopolize the communication channels. Acting consistent with an alterant or a subversive value/goal orientation, and aware that a knowledgeable minister or Cabinet would decide contrary to their interests, a distortion or falsification is effected.

This manipulative process can be categorized according to three very different reasons. The first, and seemingly most common, is to gain some personal benefit or advancement, or to promote patronage. In one form, this requires the transmission of information which supports and confirms favorable self-images held by the ideo-telic authority. This seems to be a universal requirement for ingratiating oneself with governmental leaders, and the Achilles heel of egotistical ministers. If an accurate representation of a situation does not reflect favorably on a decision-maker or control group, there is often a negative reaction to the messenger. For example, the political science advisor, when he presented survey results prior to the Social Credit government's last election, was curtly received and excused by the Premier and a Cabinet committee following the disclosure of random polling results which indicated a severe and seemingly irreversible decline in political support.[131] This was very bad information, and not the kind usually tendered by advisors and "blinkered" aides who surround political and governmental leaders. These latter persons, who quickly vanish following election defeat, consider "good news" to be the best strategy to attain their personal ambitions. They fear communicating negative impressions, or challenging possible erroneous information held by the decision-makers, thereby jeopardizing the formation of accurate knowledge which is elemental for competent decision and action.

The second type of information manipulation is not generated by a quest for personal advancement and power, but by a conflicting or alterant value/goal orientation. During the Government of Alberta's "Human Resources" period, this manipulation was evident on occasions when the governmental leaders focused on politically-oriented goals concerned with continued electoral success. Programs and commitments were short-term (from budget to budget or, at the most, five years) so that politicians could "prove" success in the next campaign. However, it was known to specialists that certain complex-generational problems such as poverty and cultural integration would require long-term support, far beyond the usual political term of four to five years. Strategy therefore entailed the presentation of information, for example, about Indians and Metis problems and program objectives, within the framework of hopelessly optimistic, but politically acceptable, timetables. This mechanism of information manipulation can be seen in the many decisions supported by the government to bring the northern

Alberta community of Wabasca from a tradition of welfare dependency to self-sufficiency through a community-owned-and-operated timber industry. If realistic times and costs needed to ameliorate the social and economic deprivation of this native community in Northern Alberta had been presented at the outset, it could be argued that this would have jeopardized the support programs. Eventually (after four years) the government withdrew its financial support of the community-owned timber company. From the perspective of certain government officials, enough time had been allowed to prove viability. Yet to those knowledgeable about this and similar communities, the development of the residents' skills in organization and management during that period of time was encouraging and significant progress.

The third type of information manipulation or distortion emanates from participants in the first three stages of the communication process who have no formal commitment to the value/goal of the ideo-telic system, but who identify with the techno-methodological system. These are generally senior civil servants, who provide ministers with information, advise them on program alternatives, offer personal advice, and monitor feedback messages. As will be outlined in the next section, these participants are committed to principles of centralization, impersonality and professionalism. When they function as information handlers in the ideo-telic system, they astutely claim impartiality in relation to political issues.

Their information, however, always seems to benefit their own professional career objectives, which are never claimed to be political. They often survive longer than the ideo-telic authorities they serve, which indicates that their involvement in forming knowledge is not generally detrimental to their alterant values.

Error Resolution

The resolution of information and knowledge formation problems occurring in the ideo-telic system of a complex government requires measures to (1) overcome error resulting from deficient intelligence, time and memory, and (2) prevent the operation of deliberate information distortion.

According to the theoretical model and operational analysis, the following actions contribute to a reduction of intelligence, time and memory related errors:

(1) Reduce the complexity and size of phenomena, which will require less intelligence, time and memory. In this case, "small is beautiful".[132]

(2) Reduce the number of stages through which information passes. As first-hand experience increases, there should be an increase in knowledge. This principle is seldom operationalized by government leaders, except in times of crisis - the classic situation is a personal investigation by the leaders of governments to disaster areas. It appears to confirm that in emergency situations, when accurate knowledge is critical (aside

from political visibility), immediate observation and analysis is the best method.

(3) Increase the intelligence, time and memory to a level commensurate with the complexity of the phenomena. Increase in time requires reorganization and additional concentration. The memory of the ideo-telic system can be strengthened at a group decision-making level by adding experts and improving information and data banks. To illustrate an attempt to increase intelligence, within the definition of the theoretical model, a major effort undertaken by the Government of Alberta will be discussed below.

For a government, the Premier and the ministers function as the "brain". The extent of their ability to symbolically integrate and rearrange variables in a social situation is determined by their interaction and coordination patterns. One of the most obvious defects of most contemporary governments is their departmental, single-function mentality of organization. During the years when special efforts were undertaken to alleviate poverty, it was continually demonstrated that poverty is a multivariable, highly complex interacting phenomenon affecting the entire range of social-economic matters in a community social system. Yet the structure of government, and the organization of information and knowledge in the government was balkanized, compartmentalized and departmentalized. The government, from the structure of Cabinet down into the hierarchical levels, reported, organized and formed information symbolizing a highly-interacting system according to the rigid, jurisdiction-bound, separated structure of government. A working paper of that period stated:

> For meaningful and effective coordination to occur in governmental services, it is necessary to examine each functional area of service...against every government department and its program. Conversely, coordination requires that departmental programs be examined as to their possible implications for the various functional areas...
>
> Lack of sufficient cross-awareness and cross-examination has sometimes resulted in programs being developed in isolation from other programs, causing overlapping, duplicating and gapping when viewed from the perspective of the functional areas. ...
>
> At present, many groups and regions see many departments carrying out separate functions without any apparent integration or coordination of services. They see a formal alliance of departments rather than an integrated system of government services. ...
>
> A preferred structural framework would be one in which coordination of functions and programs would be able to take place across a total range of social and economic matters affecting human development in Alberta. ...[133]

Essentially, the conceptual skills of the ideo-telic system, its intellectual capacities, were unable to comprehend highly interacting, interdisciplinary phenomena. There were no conceptual models analogous to the phenomena. Wholistic, totally interacting situations were subjected to an analysis breaking the phenomena into a number of separate elements (health, housing, water, education, etc.). This step is understandable, but the intellectual deficiency demonstrated itself in the organizational inability to reorganize and synthesize these elements into a new model which reflected the social reality. At that time, Cabinet ministers met, each representing a departmental or specialist area, and there was no official responsibility for ministers to function in a more general role. Their knowledge of community systems, regional socio-economic systems of complex problems such as poverty was extremely deficient. To remedy this deficiency, legislation was passed establishing the Human Resources Development Authority.[134] This was primarily a group of senior Cabinet ministers who were now to sit as a group, not representing departments but to focus jointly and generally on poverty related problems. As outlined in the Act:

> 3. (1) The functions of the Authority are to develop, coordinate and supervise provincial and regional programs and services to encourage and help individuals and communities develop their human resources to their fullest potential and in particular, but without affecting the generality of the foregoing,
>
> (a) to undertake or sponsor economic and social research necessary to determine the human and physical resources development problems and potentials in any specified area,
>
> (b) to foster awareness among local people of their individual opportunities and their communities' problems and potentials and to assist and involve local people in the preparation of social and economic development goals, and
>
> (c) to implement and assist in the implementation of projects designed to increase income and employment opportunities in underdeveloped urban and rural areas and raise standards of living therein.[135]

The H.R.D.A. operated for four years, until the defeat of the Social Credit administration. Few ministers or senior government officials fully understood the basic function of the

H.R.D.A.,[136] and even the support staff of the H.R.D.A. confused at times the role of integrative, comprehensive definition of socio-economic objectives with specific program operations. The Human Resources Development Authority was an innovative attempt to strengthen the intellectual mechanism of the ideo-telic system, and was effective in many areas where its membership could be informed and could think in an wholistic manner, forgetting for that duration their primary and publicly visible function as ministers of single-line departments.

Distortion Resolution

The second area requiring resolution in the ideo-telic system deals with the function of information manipulation. The earlier case history of the mental health system demonstrated that the only effective mechanism to mitigate this information subversion is the operation of parity information processes. Governmental measures which support independent information formation streams have always been suspect by politicians who traditionally desired control of socio-economic information. Early in Canadian history, a tradition of government-funded research councils, developing knowledge concerning physical and technical matters, was established. Until the 1960s, however, there were no research groups, with the exception of the Economic Council of Canada, that provided independent information on socio-economic affairs in society.

As part of the general human resources program, the Alberta

Government established the first public-funded social research council in Canada, the Human Resources Research Council.[137] This council had a mandate to develop knowledge, using scientific methodology, concerning the whole range of social, economic, educational and health matters affecting human development. Prior to this time, this task had primarily been the responsibility of government service departments. Because of their vested interests, environments of specialized jurisdiction and confidentiality, and secondary commitment to objective methodology, they were found to be questionable institutions for generation of quality information.

The H.R.R.C. operated under independent legislative authority and determined its own research priorities.[138] Only two of ten members of the Council were Cabinet ministers/politicians. It could be asserted that this research organization provided, at least formally, the capacity for generation of independent and reliable information.

This organization was dismantled by the succeeding government. Many reasons were given for this action, but a public incident, which may have been a precipitating incident, was a media statement on manpower research by a senior H.R.R.C. economist, which was interpreted by the press as a challenge to the wisdom of the new government's manpower policies and programs.[139] By indicating its intent to organize research under ministerial and departmental jurisdiction, the new government gained a short-term political advantage. However, according to our model, it thereby opened up the possibility once more for information control and manipulation by those administrating the research and feedback processes, primarily senior civil servants. By the abolishment of this parity information mechanism, the prospect of deficient knowledge, and ultimately inadequate decision in social affairs, was given strength and renewal.

CHAPTER VI

THE TECHNO-METHODOLOGICAL SYSTEM

In this chapter, a cybernetic analysis will be undertaken in the functional area dealing with technological and methodological formulations. The case study that will be utilized deals with the history of the Alberta Ecology Corps.

The terminology chosen to designate this system relates to the definitions of both technique and method. Technique incorporates the following meaning:

> ...the body of specialized procedures and methods used in any special field, esp. in an area of applied science...method of performance; way of accomplishing...; ability to apply...[140]

One meaning of the term method is:

> ...a manner or mode of procedure, esp. an orderly, logical, or systematic way of instruction, inquiry, presentation...a way of doing something, esp. in accordance with a definite plan...[141]

The techno-methodological system then operates to carry out those functions of defining the procedures, strategies and methodologies which will be employed to accomplish a predetermined objective. This system, when referring to a complex organization, refers to those people who are engaged in a professional, technical, specialist or management role. They are distinguishable from those who are in fact employed to operate the plans and programs they have formulated (the mechanical system).

The ideal model of governmental process has a simple understanding of the location and role of the techno-methodological system, popularly termed "the public administration".

The ideal of democratic government envisions a simple, classic feedback process. The elected assemblies and their executive leaders formulate laws, goals and policies that express the will of the people; these are implemented by the public service departments, and the results are evaluated by the people, who can maintain or change the programs by the control they exercise through their elected representatives. Ellul outlines this traditional democratic concept:

> Tradition accords great importance to deliberative bodies, councils, votes, and the designation of political leaders. Political thought revolves around this; from the point of view of democracy, the people's sovereignty operates here. This goes hand in hand with the well-known pattern, the classical and reassuring schema of administration; administrative personnel are named by the politicians: such personnel therefore depend entirely on them. ... The administration exists in order to execute the decisions of the political leaders - that is its only role. It is activated by the decisions of its central brain. Thus the vast administrative body is nothing without the political center, which is everything. Against this administration, the citizen can be and is being effectively protected: he can have recourse to channels. But more than that, the citizens are the masters, thanks to elections, councils and assemblies. They can act upon the state's decisions and therefore upon the administration. The latter is nothing but a relay mechanism, a transmission belt.[142]

For the techno-methodological system to function properly, it is necessary to understand the original phenomena, not in order to determine an objective or goal or new situation relating to those phenomena, but to determine the strategies, technologies and actions that will result in the social phenomena responding or reacting in the manner desired by the ideo-telic policy-makers.

This requires a highly reliable information set - an exacting knowledge of the current state of the target respondents who comprise the social phenomena. It also requires a professional "memory" or knowledge of a range of techniques, methods and action that will precipitate the desired state of affairs.

If an assumption is made that the control centre of the respondent system is knowledgeable or fully informed of the social actions (services, programs, laws, demands) directed towards it, then the effector action flowing from this knowledge (assuming intelligence, time and memory) will be determined by the value/goal orientation. If the strategy and methodology of the planned activity directed to the respondents accurately incorporated the value/goal aspirations of the respondent, then it is probable that the reaction of the respondent system will take the form that was originally the objective of the ideo-telic system.

Conversely, if values have been misperceived, particularly at the techno-methodological stage, then the respondents' reaction will result in an altered state in the social phenomena not anticipated or desired by the ideo-telic system (e.g. a negative vote or opposition).

Governmental Situation

The techno-methodological system, as it has evolved in governmental systems, is the prime example of what classically is referred to as the "bureaucracy". In the Government of Alberta, the senior bureaucrats are referred to as the "management group", and comprise over 1,000 individuals in a total civil service body now estimated at over 25,000 persons. This group, made up of professional management, specialists and administrators, seek as their priority objective the stability and order of their own internal "political" system. Their function of designing programs and strategies, and administering the implementing activities, is usually undertaken in an environment remote from those environments actually affected by program decisions. Their value commitment to supposed objectivity, impartiality and a general system of rules that eliminates favoritism and prejudice creates an ethic of impersonality and professional alcofness. The ideo-telic participants (politicians) represent and are in constant contact with respondents, and the workers or field staff of the mechanical system actually deliver the services, while the techno-methodological managers and specialists remain remote from first-hand encounters in their work. Elaborating rules to cover all cases, and undertaking analysis and decisions at a distance from the social action, they maintain impersonality and gradually locate operational decision-making at the central offices and away from field areas. This ostensibly eradicates impartiality and enhances egalitarian program planning, but it serves in fact to centralize and accumulate operational power in the administrative bureaucracy, where maintenance values take priority over the goals of the ideo-telic system.

A central characteristic of the techno-methodological system in modern government is the hierarchical structure, composed of a series of strata, within which peer groups form, creating social barriers between strata, and limiting communication flow through the hierarchy. In the Public Service of Alberta, levels are stratified as one moves from manager to supervisor to director to assistant deputy minister to deputy minister. Information transmission is formalized, and at each exchange there is the possibility of error, or distortion, to enhance strata peer group objectives instead of the general system objectives.

In exploring the isolation of different strata, and the behavior of members within these bureaucratic strata, Crozier concludes:

> This pressure of the peer group is one of the most relevant factors for understanding the bureaucrats' esprit de corps and ritualism. The displacement of goals that is basic to them could not take place if it

> were not enforced by the peer group as a way of protecting itself against other groups and against the organization. Task impersonality and petty regulation are, in fact, very well developed in many private large-scale modern organizations, without important effects on ritualism. The same forces have a direct impact in a bureaucratic system of organization because the isolation of each stratum allows it to control its own domain and to ignore the organization's wider goals. We should further like to argue that, in order to get the best bargain for its own members, the peer group must pretend that their partial objective is an end in itself. The members' ritualism provides good means to achieve such an end. It enables the group to assert its own differences and uniqueness, to pretend its own functions are the most crucial for the success of the whole organization. Then, finally, it helps develop and reinforce group solidarity among the group's own members.[143]

The existence of both organizational stratification leading to communication barriers, and the emergence of goal displacement, undermines the reliability of information, and produces programs and action that have limited correspondence to the plans and implementation that are implicit in the successful execution of the ideo-telic objectives.

Ideally, the techno-methodological system has intelligence, time and memory to design programs that will attain social goals defined by the policy-makers. But if this system has a value orientation dissimilar from the ideo-telic system (which is the tradition of the British and Canadian civil service who maintain a non-political orientation), and if their members remain aloof from direct observation of the phenomena, decision and action will be skewed both by inadequate knowledge and alterant values. Crozier, analyzing the centralization of decisions in French bureaucracy, states:

> People who make decisions cannot have direct firsthand knowledge of the problems they are called upon to solve. On the other hand, the field officers who know these problems can never have the power necessary to adjust, to experiment, and to innovate.[144]

There emerges in the public administrative bureaucracy a type of "heat sink" phenomenon, not unlike the popular "passing the buck" syndrome. The field staff (operational system) reacting to negative personal encounters resulting from services they deliver but do not plan, escape the "heat" or tension by referring the reaction to a higher bureaucratic level. This process continues through succeeding higher levels of communication and authority until no personal tension is experienced, or to continue the analogy, the "heat" is sunk and dispersed. The program administrator or manager is remote from the social situation, and therefore less sensitive to evaluative and emotional elements. In turn, his decisions may be inappropriate, given information deficiencies occasioned by his remote location, initiating another cycle of the same process in which the program operator in contact with respondents is delivering possibly ineffective services, precipitating additional negative encounters.

Characteristics

This analysis of the techno-methodological system as it presently operates in the public service indicates three primary characteristics that effect the cybernetic process.

1. Superior Specialist Knowledge

One of the principle criteria of Weber's "ideal type" defines the requirement of specialized knowledge in a particular area. This is a powerful factor in the subtle process by which the political leaders become dependent on the senior professional management. The Cabinet or a minister may be more informed concerning values and feelings of the public, but in technical and other highly specific areas there is always a specialist, expert or other professional who is superior in knowledge. This relationship is maintained by the present system which appoints elected politicians as ministers who function as chief executives of large administrative organizations. The competence and experience of successful politicians (public image, oratory, etc.) have often no correlation to responsibilities they later assume as ministers of the Crown. In terms of memory (knowledge derived from experience and education), they are the least qualified of any chief executives in society, yet there are no efforts to reform this situation by separating the functions of the ministry (ideo-telic) from the administration department (techno-methodological), such as has occurred in Sweden.[145] As government departments presently operate in Alberta and elsewhere in Canada, the ministers in most instances inevitably become very dependent on their senior professionally-trained administrators and experts.

This advantage in knowledge is, according to Weber's analysis, a source of dysfunction and subversion for the legitimate political process:

> ... But the very conditions of efficiency that Weber specified also can be the conditions that lead to a subversion of the rule of law and the transformation of bureaucracy from a policy-implementing to a decision-making body. In this respect the official's knowledge is important. This knowledge is technical, since appointments depend upon certified qualifications, and consists of organizational know-how acquired through day-to-day experience with the minutiae of administration. Under modern conditions, the only alternative to administration by officials who possess such knowledge is administration by dilettantes. This alternative is ruled out wherever the expert performance of functions is believed to be indispensable for the maintenance and promotion of order and welfare. Thus the official's technical and organizational knowledge is a sign of his indispensability and hence of his power, unless he is controlled by people who possess not only the authority to supervise him but the knowledge to do so effectively.[146]

2. Confidentiality and Secrecy

While the ideo-telic system in a democratic society is committed to open debate and information, at least to the extent of public legislative sessions and hearings, that is not the case with the techno-methodological system. Its participants prefer to operate behind closed doors. The members of the Social Credit Cabinet, whose operations merged with the techno-methodolcgical systems when they operated as department heads, usually held their sessions "in camera". In fact, it was not even the practice to record minutes of Cabinet's management discussions - only Orders-in-Council,[147] which documented official decisions, were issued.

This penchant for maintaining strict information control pervades the techno-methodological system. Access to administrative files and management or planning meetings is denied to the public, and to elected legislative members except under formal, limited circumstances (questions placed on the order paper in the Legislative Assembly). This strict adherence to concealment is essential to maintain control. The cybernetic model indicates that this secrecy, which undermines the parity information process, effectively prevents verification and assessment. There is no way of knowing what is actually occurring, as was pointed out in the mental health case.

Ellul, in pursuing his argument that it is an illusion to think that any control exists over the bureaucratic administration, comments on the process that occurs following an ideo-telic decision:

> From the very moment that a general policy decision has been made by the minister, it escapes his control; the matter takes on independent life and circulates in the various services, and all depends eventually on what the bureaus decide to do with it. Possibly, orders will eventually emerge corresponding to the original decision. More frequently, nothing will emerge. The decision will evaporate in the numerous administrative channels and never really see the light of day. Everyone knows of ministerial orders getting nowhere simply because they were blocked - purposely or not - somewhere along the line.[148]

Not only is Ellul a theorist, but he has participated in

French government as an elected political official, which adds legitimacy to this rather pessimistic view.[149] The consequence of orders evaporating in the system also operates in Canada at the highest level. In reality, the leadership often never learns what happens to policy directives, and bureaucratic secrecy insures the difficulty of determining precisely the eventual disposition. The classic demonstration of this aspect of concealment is apparent when the Premier tours small communities. The Premier, in response to local appeals, promises remedial action or makes a commitment, which is communicated to the administration. Often nothing results because departments consider other programs and funding commitments to have priority.[150] Additionally, the Premier often never becomes aware of this non-response.

The effect of this confidentiality is the elimination of control by superior authorities (the ideo-telic system), and a reduction in accountability to outside interests. Bendix, interpreting Weber's views on bureaucracy, cites the dysfunctional consequence of officials, more knowledgeable than their superiors, concealing their deliberations:

> ...officials buttress their superiority as technical and organizational experts by treating official business as confidential, thus securing their work against outside inspection and control. This tendency toward secrecy has a rationale wherever the power interests of an organization are at stake in its contest with hostile organizations. Private enterprises, political parties, military establishments and foreign offices all practice concealment as a means of improving their chances of success. But this secretive tendency exists even in

> the absence of plausible justifications. Every bureaucracy will conceal its knowledge and operation unless it is forced to disclose them, and it will, if need be, simulate the existence of hostile interests to justify such concealment. Clearly, such practices subvert the rule of law, because an administration that cannot be inspected and controlled tends to become a law unto itself.[151]

3. Goal Displacement

The third characteristic of the contemporary techno-methodological system is goal displacement, effected by developing and managing programs and services which express primarily the values and goals of the techno-methodological system, reflecting in a secondary manner the objectives of the ideo-telic system. The methods and administration implicit in a projected successful consequence, by the politicians' standards, are changed and altered to conform to the technical and instrumental values (technical efficiency, standardization, central control, etc.) of the bureaucratic authorities.

This goal displacement is not a general phenomenon, but operates variably throughout the government services. Architects and engineers want to build enduring physical edifices, where the ideo-telic function might better be served by functional, mobile, short-life-span buildings.[152] Medical specialists in the techno-methodological system advocate large, centralized, technically sophisticated medical centres (with computers and servo-mechanisms increasingly replacing nurses), while the respondents, expressing their will through the ideo-telic process, might possibly prefer increased home care programs.[153] These are two prominent professional areas where goal displacement often operates. To the extent the professionals and administrators can control technical knowledge, they can manipulate policy directives and political objectives to embody their own subsystem values and goals, and maintain an amicable, supportive relationship with uninformed ideo-telic superiors such as Cabinet ministers. Ellul views this as a transformation process:

> What we see is a transformation of central importance: what used to be a system of transmission has progressively turned into a system of decision; what used to be a ministery (literally, service) has turned into a power. But we do not have here a real range of diversified centers of decision-making in opposition to one another; rather we see here a multitude of interrelated decision-making centers, none directly responsible, all included in the same machine. Today, that is the state.[154]

The ultimate consequence of goal displacement in a complex cybernetic system is a multiplication of problems. The respondents are not satisfied with services, the communication process becomes unreliable, efforts to resolve social problems are inappropriate, and system tension and conflict are intensified.

Problematic Features

From the above discussion, it can be asserted that there are two serious deficiencies unique to the functioning of the techno-methodological system in our present governmental complex.

The first problem is the inability to relate to responsive, volitional realities such as social phenomena. The value/goal orientation of the techno-methodological actor in contemporary bureaucracy is management and administration. The participants attempt to gain sufficient control over a specified area of professional or technical jurisdiction so that the consequences and changes occur within a predictable, ordered sequence.

This is a reasonable objective if the manager has sufficient knowledge, and if the phenomena embodied in the objective are predictable and invariable. It was asserted earlier in this thesis that the three different elements inherent in social phenomena, symbolized by three qualitatively different classes of information, complicate the possibility of acquiring adequate knowledge of a social situation, increasingly so as information is communicated through a multi-tiered bureaucracy. The problem is compounded if the social situation is large and complicated - the one-room country school of the 1930's is one type of social situation, and the composite high school in a metropolitan region is significantly another in terms of complexity and size.

This increasing complexity of valuing and feeling phenomena creates a volatile, ever-changing situation. From a theoretical viewpoint, efficient management is still possible, but the requirements of intelligence, time and memory are now becoming enormous.

Administration and management find highest expression of efficiency when there is maximum knowledge - the less unknowns and error possibilities, the greater the possible success (assuming the absence of value conflict and adequate resources). This is demonstrated by the accomplishment and efficiencies of the administration in physical programs - super highways, parks and beautiful buildings are the most obvious. What is noteworthy is that the greatest success occurs in these public works projects, which being physical phenomena, obviate the need for knowledge in the two other classes in social phenomena - values and affect. In addition, the macro-cybernetic system, in relation to physical objectives, does not require a respondent subsystem. The actions of the mechanical system feed directly back to the ideo-telic system. In this type of situation, the possibility of a knowledgeable decision is greatly enhanced, and the uncertainties of successful action attaining the desired goal are reduced by elimination of one subsystem.

The leader or professional who pledges to build a new bridge has a far greater possibility for successful attainment than those whose commitments contain promises to abolish poverty, eradicate crime, or to rehabilitate alcoholics. The latter commitments predict the actions of a responsive system, which they cannot determine without vast awareness and knowledge of values, aspirations and feelings of those who make up the respondent system.

There are those who ask why it is not possible to cure the social ills of society when it is possible to land men on the moon. The attempts to transform the framework of technical engineering into a new science of "human engineering" fail to recognize the conceptual difference between physical and social phenomena, and between mechanical and respondent systems.

The same applies to "economic planning" which often operates on numerous untested social-psychological assumptions about "rational behavior". Natural behavior of respondents involves values and emotions - both critical to economic behavior. A "run on the bank" is based on fear, not economic reason, and inflation is fueled by consumer attitudes of insecurity due to perceived shortages of vital commodities.

If this distinction between physical and social phenomena is valid, then it could be assumed that an administrative system dealing with social phenomena would use methodologies, strategies and management styles reflecting this basic difference. However, upon analysis of service departments in government, one finds the same basic administrative and management orientations operating in all departments.[155] Given the above discussion, it would have been reasonable to assume that management in the Department of Youth or the Department of Social Development would have notable departure from, for example, the Department of Highways or the Department of Lands and Forests.

The basic administrative approach in all departments is essentially similar - this is a key indicator of professional management's priority commitment to its own administrative uniformity, standardization and order. To the bureaucrat, the criteria of a good program are efficiency and order. Whether it serves a human need, or resolves some problem in the physical environment is secondary.

The tenacity of public service officials to maintain administratively efficient programs that no longer relate to realities in society is a serious factor in delaying organization reform. In 1970, one of the oldest departments of the Government of Alberta, the Provincial Secretary, was disbanded.[156] Some officials could not realize that this action was prompted, not by some administrative inefficiency or management incompetence, but by the changing nature of Alberta society and overall government organization.

It was suggested earlier that the management of programs to insure uniformity, predictability and order required appropriate and sufficient knowledge, and that this was evident primarily in projects dealing with essentially simple, physical phenomena. To attain appropriate knowledge when dealing with social objectives is much more problematic. In governmental operations, there are usually two types of responses. One is to simplify the social task, setting as targets less ambitious changes in human situations. There are less information variables, and consequently comprehension and knowledge is easier to attain, making possible greater control and success, but in a smaller field of operation. In Alberta, the reduction in commitments to eradicate poverty illustrated this reaction to extreme complexity and inadequate knowledge.

The other techno-methodological response involves maintaining the size of the social program, but reducing its definition to a simpler information classification. This is generally referred to as a "dehumanizing" process, where public programs disregard personal or group values and feelings, and treat everyone the same according to simple, empirical categories. This will be evident in the case outline following.

Both of these attempts to manage the operation of a program do not adequately acknowledge the responsive and volitional nature of many social situations. From the perspective of the macro-cybernetic model, it is unreasonable for government professionals to devise social programs where they desire to control and administer, in their sense of efficiency, the response. If the techno-methodological actors continue to assert their own alterant values in a democratic governmental system, it appears they will constantly fail in designing sensitive programs which allow people to respond according to their self-defined needs.

In our complex socio-economic system, both the simplification of objectives and the elimination of evaluative and affective aspects of phenomena will damage knowledge formation, eventually jeopardizing the functioning of the entire system.

This analysis seriously delimits the assertion that bureaucracy is the most rational and efficient form of organization.[157] As the tasks and goals move from physical to human and social phenomena, the superiority of the bureaucratic organization increasingly becomes an illusion, manifesting primarily a history of failures in efforts to achieve social reform.

Problem of Entropy

The second deficiency inherent in a techno-methodological system established according to professional bureaucratic form is its tendency toward entropy. If a characteristic of entropy is sameness, similarity, uniformity and lack of distinction or differentiation in its organization,[158] then implicit in the bureaucratic ideal is an "entropy wish".

One characteristic of modern management is the effort to develop a complete taxonomy of all matters within the field of jurisdiction, so that any event or activity is anticipated in the classification, categorization and regulation paradigms. Information is a question of matching the phenomena to the appropriate pre-defined action. In practise, once these schemas are established, they become very rigid, and they resist response to new information, or the creation of new categories.

This state is not unlike entropy, where the probability of new information is extremely low. This type of environment is extremely destructive for creativity and innovation, which disturb the bureaucratic steady state, and add a measure of new "life". To employ the concept of entropy, originally used to define a theoretical state in the science of physics, is a cogent way to explore a basic defect in bureaucratic organization. As the bureaucratic management becomes insensitive to new information, and less knowledgeable about complex societal processes, its responses become increasingly predictable, with a trend toward homogeneity and uniformity. Negentropy, or new information, moves the state to a new level of organization - this effect, in operational bureaucracy, would require more precise and sensitive organization. There is no compelling evidence that public management, in Canada at least, is ready to alter the structure of the general, uniform public administrative structures that have formed at every level of government.

CASE STUDY - THE ALBERTA ECOLOGY CORPS

This bureaucratic phenomenon of order, impersonality and centralization, imposed upon the implementation of a socio-political objective, can be illustrated by a short case history of the Alberta Ecology Corps.

The Alberta Ecology Corps was formed as a response to student unemployment projected for the year 1971. Information concerning the socio-economic phenomenon of unemployment, and the desire of students for economic security and meaningful employment opportunities, emerged from two streams. Official reports and statements, summarized below, indicated the dimension of the problem:

> Statistical Reports
>
> At the end of January, 1971, both DBS and Alberta government statistics indicated approximately 41,000 Albertans were unemployed. This rate of 6.7 percent compares very unfavourably with the 4.2 percent rate of January, 1970, and is one of the highest unemployment rates Alberta has seen in years.
>
> The forecast indicates the situation for regular employment will improve over the coming months, but this is complicated by the anticipated influx of post-secondary students into the labour market beginning the first of May. Canada Manpower estimates 31,150 university students and 7,900 other post-secondary students (colleges and technical schools) will be seeking employment this summer. This does not include consideration of summer employment for high school students.[159]
>
> Survey Results
>
> The most recent political surveys have shown that the number one public concern is employment. At this time, the major special initiative of the Government of Alberta has been the employment projects annunced under the $6.2 million federal-provincial special development loan program. This program was initiated by the federal government, and there still appears to be widespread public support for the Government of Alberta to undertake additional measures to constructively deal with the unemployment situation.[160]
>
> Memorandum from the Minister of Finance

> You will recall the discussion which took place at the meeting of the federal and provincial ministers of finance and provincial treasurers early in December, with regard to the federal proposal to make available a total sum of $150 million in loans at favourable interest rates to assist the provinces in the early undertaking of an increased program of capital development projects which would stimulate growth in employment, particularly in areas of high unemployment. All of the provinces have indicated their intention to make use of these loan funds, and I now understand that our respective officials have also had various discussions on details for immediate implementation of the program.[161]

Letter from the President, University of Lethbridge

> As we look forward to the coming summer, we have become increasingly concerned about what seems to be an inevitably high rate of unemployment, particularly among younger people.[162]

Letter from the Prime Minister to the Premier

> Like the government of Alberta, the federal government is deeply preoccupied with the lack of job openings offered to students during the summer. Cabinet has examined the situation carefully on the basis of a report prepared by an interdepartmental committee about a possible summer programme for students.
>
> After full discussion in Cabinet, a number of measures have been selected. The aim of the overall programme is to permit the greatest number of students possible to participate more completely in the various aspects and activities of our national life.[163]

The second major information set was presented by Alberta post-secondary student leaders in meetings early in February, 1971. The meetings with the students were chaired by the Cabinet minister who headed the Human Resources Development Authority, and attended by advisors and aides to the Premier and Cabinet. All functioned as participants in the ideo-telic system. Based on the empirical definition prescribed in the above reports, and incorporating the concerns and values expressed by student leaders, a model was formed defining the criteria for a major program to alleviate student employment.

This model of program objectives attempted to incorporate all classes of information which were communicated during the briefing sessions and in the reports. It also reflected the value orientations of the ideo-telic group, and will therefore be termed the "human development model". The model included the following definition:

(1) There should be a significant increase in student employment opportunity for the summer. This was finally targeted at 1,300 new jobs that had not been presently available.

(2) The employment programs should provide positive experiences with which students could identify, such as conservation, ecology and social service endeavors.

(3) The employment programs should allow students the opportunity to be innovative, creative and self-determining. This would incorporate student-designed programs which were managed by responsible students.

(4) The program should be publicly visible so that the community at large would be aware of students employed in beneficial and worthwhile undertakings (this was designed to offset public concepts of "lazy, irresponsible" students).

(5) The remuneration in the program should be sufficient to allow significant summer savings but not above the level of $1,000 which would then disqualify the students from eligibility

for student grants and loans in the succeeding academic year.

The above characteristics comprised the value/action model held by the ideo-telic group, and served as the target information set against which the current situation was examined. The proposed action was then designed to bring the existing situation as close as possible to the defined model or objective.

To understand the development of the program, it is helpful to pursue the stages subsequent to the initial definition of program objectives, since this partly explains the later reaction of the senior administrators:

1. The Minister of Social Development received informal approval from the Premier, and formal approval to proceed with a student employment program from the Cabinet on February 17th. In late February, the Minister authorized the Special Consultant to the Executive Council and two department officials - one from Social Development and one from Youth - to proceed with Ecology Corps planning. A critical path outlining the entire project was developed.

2. The Premier held a press conference on February 25th, announcing special employment programs, including the Alberta Ecology Corps. The public reaction, including that from the Opposition in the Assembly, was of a positive nature. Immediately thereafter the inquiries began and it became necessary to establish some mechanism to proceed with the

development of the Ecology Corps program. At that time it was suggested that a presentation be made to members of the Cabinet but it was indicated that time was not available. The Minister of Social Development was designated as responsible for the development of the program and gave authorization to the Special Consultant's Office to undertake whatever measures were necessary for preliminary development until such time as a formal authority was established.

3. In terms of jurisdiction and financial authority, proceeding with the initial phase of the program of necessity resulted in an undefined and indeterminate situation. Urgent deadlines required immediate decisions if the program was to be operational by May 1st, yet there was no official financial authorization to proceed, nor was it possible to immediately resolve this problem for the following reasons:

(a) The 1970/71 budget appropriations were still operative and could not be utilized for the Ecology Corps (which related to the 1971/72 fiscal year).

(b) The new budget would not be operative until April 1st which was still four weeks away.

(c) With the Assembly in Session, no special warrants by the Cabinet for unforeseen expenses were possible.

4. Work proceeded with the Minister's authorization, but concern remained over the matter of formal authority. One measure proposed to resolve this was the suggestion that an urgent bill be submitted to the Legislative Assembly authorizing

the Executive Council to establish an employment development fund having an upper limit of $10 million. This would have removed special employment programs from the federal government's loan program and allowed flexibility and speed in response to immediate employment proposals. The Premier distributed this proposal to members of the Cabinet but no action was taken.

5. The planning of the Ecology Corps program proceeded. This involved decisions on program identity, recruitment, personnel and reception of project proposals. A minimum number of decisions were made, and the rest were kept in abeyance, pending the establishment of a formal structure. The tentative program design reflected the above-stated ideo-telic criteria. As a general director, a university staff member experienced in dealing with students and knowledgeable about their values and concerns was sought. In addition to the regular administrative staff dealing with finances, personnel and project supervision, two positions were also included for educational and social service officers. Previous experience in large summer student programs indicated that many educational and social needs would be confronted in addition to the normal economic aspects of employment projects.

6. Measures to establish the program on a formal basis did not begin until early April, and official meetings with senior administrative staff did not commence until April 7th. This was the first occasion for those representing the ideo-telic

orientation to discuss detailed program management with officials of the techno-methodological system. At the meeting of April 7th, senior departmental officials reacted negatively to the structure of the proposed program. In terms of their administrative orientation, they were uncomfortable with crisis programming (regardless of the reality of the social situation) and they were unsympathetic to arguments that post-secondary student employment programs should be particularly sensitive to human needs. One official's summary comments, relating to the administration of the employment programs, noted:

> It is appreciated that these are emergency programs to be undertaken without undue delay. Nevertheless public money is being spent, and the necessary authorities and procedures required in our statutes must be observed.
>
> Some of the programs, particularly Youth Ecology, present problems, and if practicality demands it, then perhaps there could be some flexibility in the rules, but in such cases the procedure should be authorized by O.C.[164]

These comments acknowledged that the phenomena which the ideo-telic system must deal with have unique characteristics, but nevertheless insisted that established procedures must be observed: flexibility is only a reluctant concession.

In the meeting itself, the frustration of the senior bureaucrat in the face of a situation that did not fit established, standardized procedures was evident in several statements. The most dramatic was his suggestion that perhaps the whole program should be cancelled, despite the fact that the

Premier had announced the creation of the Ecology Corps as a public commitment to deal with serious student unemployment. Following this meeting in which the senior administration rejected most program proposals submitted by the planning group which had operated for five weeks under the authority of the Minister, the Special Consultant reacted with a critical letter to the Premier, which included the following two paragraphs:

> I empathize with the administrators' demand for order and accountability. However, one senses that to some accountability and efficiency can only be achieved by adhering to traditional structures and procedures. Certainly there must be an openness to modification and innovation that would allow greater flexibility without sacrificing accountability or legal responsibility. This always seems to be a problem area in the face of public conditions demanding urgent response. Under normal conditions, for instance, a complex program such as the Alberta Ecology Corps, developed over a period of many months, would be compatible with many of the existing procedures. However, this program, the largest of its kind in Canada, arose in an urgent environment, with legal and time constraints from the very beginning. Not surprisingly, the required responsiveness did not lend itself to many traditional administrative regulations or routines.
>
> The Government originally received a public mandate because it was deeply concerned about unemployment, poverty and depressed economic conditions. It proposed innovative programs which were challenged by the traditions and conventional wisdom of that day. To sense from officials associated with the same Government a limited interest and some reaction to innovative and flexible approaches during our present period of unemployment is disappointing. The opinion surveys in March indicated that Alberta residents would greatly support any Government measures to ease the most severe unemployment situation Alberta has seen in many years. Under these circumstances, one would hope that the priority concern would be the attainment of measures that would ease the hardship of thousands of Alberta residents. In this context administration must be subservient to the objectives of a program, and if that objective requires

> modification in the administrative procedures, then this should be accomplished with minimum tension.[165]

At a subsequent meeting held on April 8th, of a special program committee, attended by six veteran administrators, the management values dominated. This is evident in certain portions of the summary minutes:

> ... However the situation with respect to the "Alberta Ecology Corps" is much more complicated. Apparently the proposal is to create such a "Corps" for the purpose of enrolling post-secondary education students to perform summer work in further development of forestry services, parks and recreational areas within both Provincial and municipal jurisdictions.
>
> The Committee felt that the proposed set-up appears to be complex and cumbersome. The administrative supervisors are not knowledgeable in work camp procedures and conditions, and the payroll and board proposals invite undesirable situations.
>
> The Committee agrees that the project is sound, but that it should be undertaken as additional development by Government Departments and Municipal Councils. These bodies are fully conversant with the hiring and paying of wage earners and the establishment of conditions and procedures in work camps.
>
> Consequently, it is recommended...that the present concepts of the "Alberta Ecology Corps" be modified...that the present recruitment and selection program be proceeded with under the direction of the Public Administration Office...that because of the short time available, and also because of its practical application, wages and room and board be paid by departments, municipalities and other organizations in accordance with their normal practices and rates, except that the minimum wage rate is $250.00 per month, and that they comply with all normal terms, conditions and requirements pertaining to employment of temporary staff. ...
>
> After considerable discussion it was agreed that a number of difficulties resulted from a student-oriented program. However there should be no deviating from the main purpose, namely: employment of approximately 1300 students during the summer

months.[166]

From analysis of the meetings and memoranda, and participation and discussion, it is possible to construct a model which represented the senior administrators' perception of what would be a desirable objective, particularly from their concerns as professional managers. This definition, which includes the following factors, could be termed the "economic management model":

(1) Employment opportunities should be provided for students.

(2) Employment programs should operate within existing procedures so that there was no disruption of current administrative routines.

(3) A fair amount of work should be received in return for employment and therefore supervision of projects should be under people experienced with work camp procedures.

(4) All accounts should be certified by responsible civic officials.

(5) The priority for projects would favor provincial and municipal governments. Private projects would have minimum priority.

This process of resolution regarding the objectives and operation of the Alberta Ecology Corps continued through to April 15th, at which time a decision was made to support the recommendations of the senior departmental administrators, including modification in the concept of the Alberta Ecology Corps and the absorption of program management into existing line department programs as much as was possible. Recruitment and selection would follow established administrative procedures. To insure impartiality in selection of applicants, numbers were assigned by computer in random order, divisions were made in accordance with Census Divisions and male-female ratios, and selection was done by computer. Successful applicants were sent offer letters, and "accept" cards were to be returned within five days. In the duration of the program, over 2,000 applications were received and over 1,700 were selected and employed by this impersonal computer process. This method of selection is a sophisticated illustration of the commitment to impersonality and impartiality operating in modern bureaucratic administrations. Understandably, it produces efficiencies for the administrators, but is in no way responsive to unique personal situations deserving special consideration.

As part of the modification of this program, authority was transferred from the Minister in charge of the Human Resources Development Authority to the Minister of Lands and Forests.

This case history demonstrates dominant characteristics of the techno-methodological system as it presently operates in large governmental processes. In analyzing this case within the context of the cybernetic model, one major difficulty resulted from the divergent information sets which formed the basis of each group's understanding of the social phenomena. The information set of the ideo-telic group was comprised of the following:

(1) Empirical facts - students are able-bodied and have special skills.

(2) Evaluative information - students are responsible and concerned about environmental and human issues.

(3) Affective information - students are reasonable and enthusiastic employees.

This can be compared to the definition utilized by the administrative group:

(1) Empirical information - students are able-bodied and unskilled.

(2) Evaluative information - students exhibit limited responsibility and industriousness (questionable ambition).

(3) Affective information - students are disinterested and too independent.

If there had been time to develop a verification stream of information, it probably would show that many of the students would fit the information set that was the basis of the advisory group's approach - that students were responsible, creative and could manage themselves. Additionally, there probably would be evidence to indicate that a percentage of students also are exploitative, not interested in working diligently or not carrying out responsible work, which is the basis of the administrators' concern for accountability and experienced supervision. This was in fact borne out by the follow-up study.

From the perspective of the senior administrators there would be the argument that the ideo-telic group was acting on the basis of inadequate informtion about students. The senior administrators, from their years of employing students, were knowledgeable about situations where careful supervision and management were essential to obtain responsible work. They also encountered over the years incompetent and unskilled students which created difficulties for employment programs. Since these types of students always come to the attention of the administrators, there is a possible tendency to generalize this image to a greater population of students. On the other hand, the ideo-telic group's image was probably liberal and overly solicitous toward students since the presentation of the problem was always made by student leaders who were competent, responsible and conscientious individuals. This no doubt biased the evaluative information which was carried in the advisory group's information set.

The ideo-telic group, themselves having recent student experiences, was sensitive to that element in the student population whose values and feelings about employment programs could be considered irresponsible. By defining a model that would appeal to the conscientious student concerned about ecological and social issues and by maintaining salary levels at a minimum, it was hoped that those who would be attracted to the Ecology Corps would exclude the irresponsible student interested in a "rip-off".

The formation of the information set in the administrative group at some stage lost, filtered or manipulated information about student values and student feelings. Generally, their model was only representative of the empirical facts - there were a certain number of surplus bodies available to work for the summer months. They did not deal with current information about values of the students or the mood of the students. Information regarding values and affect came from their past memory and was of such a nature that they required strong supervision and accountability procedures.

In reviewing this case, some observations can be made:

1. The effect of the program established eventually by the Department of Lands and Forests was to effectively cut out nearly all creative projects, particularly those conceived and submitted by students themselves.

2. One procedure to alleviate the discrepancy in information sets between the advisory group and the administrative group would involve the exposure of the administrative group to the same information which was originally presented by student leaders in the early discussions. This would have provided some newer, more current images of students than those retained in the memory of senior officials, many of whom had not worked intensely with students for many years.

3. In this case, even if both information sets had been in agreement, there still could have been no consensus on action

because the models defining the desired objective of a program were incompatible in important aspects.

4. A great deal of confusion resulted because there was an initial set of actions undertaken such as the Premier's announcement of the establishment of an Alberta Ecology Corps which was based on the information and assessment provided by the advisory group. Two weeks later a number of reactions began, based on the information and the model held by the senior administrative group.

5. Eventually a compromise was outlined which defined a program that retained the name and the number of jobs targeted, but altered the definition, supervision and accounting of all projects which operated under the Ecology Corps.

6. The results of the established programs were eventually fed back to the decision-makers. Whether or not the new altered state of affairs that resulted from the Alberta Ecology Corps reached its intended objective depended once more on the control model which was the basis for assessment. In terms of the administrative model the objective was attained, but in relation to the advisory model the program simply provided 1,300 make-work jobs at low salaries, most of which were not relevant to the students' personal values or feelings.

One government official who was involved with the program, both from its original inception to its conclusion after the first summer, saw the process as a classic case of innovative and sensitive governmental responses being undermined by an administrative, regulatory mentality. The case illustrates that it is problematic to undertake action on the basis of two information sets which do not have general agreement, particularly without the operation of a third independent verification information set, which would serve to clarify what information comprises an accurate representation of the social situation. The incompatibility of the two control models is essentially an issue of value priorities. There is a tendency for some professionals to turn to new or additional information as a means of overcoming value conflicts. This type of problem cannot be resolved by information verification, but only by an ideological/value realignment.

In summarizing the analysis of the techno-methodological system, it is evident that the problems which emerge are related to the environment of confidentiality maintained by senior officials, their insensitivity to the values and feelings of program recipients, and their espousal of deterministic values. The resolution of these problems will require mechanisms which open up or expose the information base used by the administrators and planners whose actions generally are shielded by Cabinet ministers who are officially accountable to the public. This would undermine both secrecy and the operation of subversive values. The development of greater sensitivity and understanding of clients will necessitate more involvement and direct experience with people who are served by programs. The periodic participation by senior officials in the common tasks and activities experienced by most citizens would serve to overcome their knowledge deficiencies which result from the remote social environment in which senior officials operate.

CHAPTER VII

THE MECHANICAL SYSTEM

The third subsystem in the complex cybernetic process is termed the mechanical system. The basic function of this mechanical system is to perform physical, mechanical or other energy tasks in order to operationalize the plans, designs, strategies, directives and instructions emanating from the techno-methodological system.

The phenomenon which initiates the mechanical process is the techno-methodological definition of an activity or operation which, if properly effected, will yield a result designed to alter or change a previous social state so that it approximates in reality the goal prescribed by the ideo-telic system.

The information and knowledge which is the concern of the mechanical system comprises imperative instructions, commands or prescriptions to perform tasks that are characteristically a mechanistic function. The official exercise of this function does not acknowledge evaluation or affectivity. The mechanical system does not reflect or pass opinions on objectives and plans. The actors of this subsystem contain in their decision-action centre the repository of knowledge, values and attitudes necessary to implement the instructions - these are generally the deterministic and predictable reactions of the reliable machine.

If the knowledge formed by the mechanical system concerning the techno-methodological phenomena is based on a correct representation, and if the mechanical system values the operationalization of these directives (for whatever motivation) and can properly effect the work required, then the cybernetic process is efficient. The actions which result then become the phenomena which form the basis of the respondent subsystem's actions.

In a complex bureaucratic type of organization, such as exists in modern governmental systems, the mechanical system is identified as those participants and actors relating to mechanical roles. Using Lenski's term for classifying occupational groups in industrial societies,[167] the mechanical subsystem would be comprised of clericals, tradesmen, operators and workers. This system, within the formal employment boundaries of government, encompasses the greatest percentage of persons.[168] This subsystem is generally regarded as the domain of the "workers" and the unions.

The participants in this system labor primarily as machines, and are utilized in combination with technical devices (tools, typewriters, etc.) to bring into reality the new conditions anticipated in the plan, design or instruction. They are considered as machines, within the context of this theoretical model, because they are selected and retained on the basis of a technical or mechanical aptitude, skill or knowledge, and are officially assessed for operating similar to a machine - accomplishing a prescribed task reliably, predictably and without reaction. Like the machines, they are not required to select among values or decide among strategic alternatives. They are trained, or pre-programmed, to act predictably according to directives. A prime illustration is the clerk-typist, who is judged on the basis of typing skill, filing experience and appropriate manner - ideology, values and feelings are inconsequential if these mechanical-type tasks can be effectively performed. A brilliant, concerned and sensitive human who has limited dexterity on the keyboard is rejected - the mechanical skill is the focus, not the human personality. The same approach prevails in the entire category of technicians, workers and laborers. A job classification, defining the skills and knowledge required to undertake mechanical-type tasks, is the basis of employment. Other human characteristics, particularly values and beliefs held personally, are generally disregarded.

On this basis, the techno-methodological system can design a set of activities and assume good drafting, good machinery, good carpentry, good teaching, good nursing or any number of mechanistic tasks that have been pre-defined, and for which individuals have been trained and pre-programmed.

The exploration of this cybernetic model in relation to the mechanical subsystem indicated three general types of emergent problems.

The first concerns the process of "dehumanization" implicit in the functioning of the mechanical system.

Techno-methodological subsystems, with their commitment to management, standardization and predictability, regularly embody in their program designs the logic and methods of the advocates of scientific management.[169]

In their operational designs, they simplify and reduce human motivation to simple economic rationality. Having accomplished this reduction, they consider each human operator as a standardized, mechanized component - an instrument that can be interchanged, and whose response in the work situation will remain predictable and generally consistent.

This "dehumanizing" definition requires the elimination or disregard of considerable information about human behavior. The general model of this thesis stresses the evaluative and affective aspects of human phenomena - aspects that are downgraded by senior planners in their manpower strategies.

This "dehumanized" definition is dominant in contemporary definitions of technicians, clerks, workers and other forms of labor in the governmental service. By structuring participation in the mechanical system on a model of economic exchange, money and security in return for technical services and labor, the participant has assumed a role of instrument or service mechanism. He or she has sold their body and skill for economic reward.

It is not officially possible for an individual in the public service of Alberta, or any Canadian governmental service, to work on some basis other than economic exchange because one shares the objective of the governing party, for instance, or because one enjoys performing certain tasks (such as teaching). To volunteer labor, or to exchange service for some other reward (public citation) would only be possible if it were officially acknowledged that the human qualities of values and feelings were as significant in the worker as his or her technical or manual skills. This would require, however, a non-mechanical definition of the role, and only complicate the techno-methodological task of designing a delivery system. By maintaining a simple definition, there is the illusion that the predictability of the tools and instruments for effecting the programs can be assumed; they are seen as inter-changeable components.

A simple definition, which neutralizes the volitional and unpredictable issues created by an acknowledgement of values and emotions, also simplifies the communication process. As illustrated early in the thesis, the possibility of information error decreases with simplification of the number of variables in the information set. Plans, instructions and orders are comprised primarily of specific empirical facts, and information about values and affect are virtually neutralized or eliminated.

An instruction to a machine is a simple information set, and consequently the problem of error in the communication flow is minimized. (This does not, however, alter the problem of manipulation.)

The official disregard for the evaluative and affective experience of workers in the mechanical system creates potential problems for the functioning of the system. In the Province of Alberta, whether or not workers share the official ideology of the governing party is of no official concern. Neither is there formal recognition of the mechanical system participants' approval or disapproval of the plans and programs designed by the senior professional officials. All that is required of the vast majority of public service personnel is to effectively carry out the work instructions directed by management officials. Within the exercise of the mechanical role, the worker is not involved in establishing program goals, or determining the methodology to be executed. He or she does the work, and is not generally invited to challenge or question the objectives or strategies. To question, or even to officially comment on policy and programs, is clearly discouraged.[170]

Despite the findings of Roethlisberger[171] and others on the motivational aspects of workers, the practice of government planners to reduce the workers to technical definitions continues, being manifest in exercises, such as time-motion studies of nurses in large hospitals,[172] which reduce this sensitive service to physical patterns of movement.

The "dehumanizing" character of the mechanical role officially alienates the worker or laborer from the knowledge, purposes, ideas or strategies which are implicit in his task, and which provide the gestalt that gives the human tool a more comprehensive meaning than simple economic exchange.

In large, complex organizations where participation is limited to one subsystem, and a single person is equated with a single role, precluding possible participation in all four subsystems, the workers are caught in the least human of roles that the total system offers.

It is in this situation that the union movement has emerged, offering workers a more meaningful social definition of themselves. They offer an ideological meaning to the laborers, albeit it may be a subversion from the perspective of the ideotelic system. As governmental systems in Alberta have undergone extensive growth and complication, the strength of unions and workers' associations has greatly increased. During the 1960's, the Civil Service Association of Alberta was a low-key association that negotiated almost informally with the Cabinet. The leadership of the Association had personal acquaintanceship with the Cabinet ministers; however, by the early 1970's, formality increased with the expansion of the governmental system. The increasingly distinctive identity of public workers was manifest in a number of developments. The Civil Service Association was approached by the Canadian Union of Public

Employees regarding formal alliance. In 1974, the first major strike by the Civil Service in the history of the Government of Alberta was held; the Civil Service Association had passed a resolution to incorporate the term "Union" in its chartered name, and active discussions were underway relating to formal participation in a new National Union of Provincial Employees.[173]

To those older governmental officials who lamented this development, there was the unawareness that, while the governmental process never officially allowed the workers to discuss government policies or program design, the proximity of the small system of earlier years had allowed this to occur informally. By the 1970's however, the scale and complexity of the government had made informal association between Cabinet ministers, senior civil servants, and public service workers nearly impossible, and consequently the human expression of the workers was being consolidated in the union movement, which is antithetical to dehumanizing definitions of work.

The second type of problem emergent in the mechanical system concerns information manipulation. In the mechanical system of large governments, plans, directives and instructions are presented by some techno-methodological functionary to a supervisor or foreman, who in turn commands and orders lower level operators. In a complex work project, this process could approximate the multiple stage process of the initial general cybernetic model, passing from presentation through transmission to receptor stage. Eventually, a single worker or group who performs the operation receives a work order. These individuals are usually remote from the techno-methodological system, and are dependent on the instructional information set provided by their immediate supervisor.

It was indicated above that the plans and directives emerging as activity from the techno-methodological system are not as complex phenomena as other social realities, for they minimize evaluative and emotional issues. Work orders are generally precise, ordered and unambiguous and therefore less susceptible to information error produced by some mechanical participant deficient in intelligence, time and memory. The more obvious problem indicated by the mechanical model is manipulation of the instructions and orders by functionaries committed to some value system which is alterant, and perhaps subversive to the goals and objectives of the ideo-telic or the techno-methodological system. This possibility is significant in the mechanical subsystem, where a strong authoritarian, hierarchical order persists. No parity information stream is operative. A technician or worker, receiving an order, does not normally challenge the order or circumvent his immediate superior by requesting verification from another information source, such as a more senior authority. The operator responds to a directive on a non-reflective basis, in the awareness that his role does not generally allow him the right to question.

Granting the description of the above situation, a strong alterant/subversive ideological centre operating inside the mechanical system can exercise strong control over the output and action of the workers. Union leadership has effectively monopolized the communication flow in this subsystem to a point where the public service workers respond to their directives. The consequence of union (and occasionally other radical subversives) control of the cybernetic process in the mechanical system may be expressed in the occasional occurrence of the following activities resulting from manipulated instructions:

(1) Sabotage (a worker commits a destructive act to the system).

(2) Work to rule (an extreme narrowing of the techno-methodological orders).

(3) Booking off extra time (for non-existent sickness or study).

(4) Illegal strike (refusing to undertake work).

These above actions by the workers, now common in the public service, are consistent with their re-formed instructions from persons or groups who control and manipulate the intended directives of the preceding subsystem. A variant of this process was discussed by Homans in his analysis of controlled work output in the Bank Wiring Room.[174]

The third problematic area in the mechanical subsystem concerns a syndrome which will be termed "illegitimate information" held by the mechanical functionaries. Simply, this deals with the issue of the technician, service workers, and laborers knowing much more than they are officially acknowledged to know. This syndrome is partly the result of two processes:

1. Liberal education. Nearly all individuals in governmental service today have some form of high school education. Increasingly, in Alberta and elsewhere in Canada, the curriculum is stressing reflection and critique, as well as encouraging a general knowledge of governmental and social issues.

2. Experience. The workers, being closest to recipients in many social programs, gain new knowledge about the social situation toward which they direct their work and services.

There is a consequent accumulation of knowledge by mechanical actors that is officially proprietary to the ideotelic and techno-methodological actors. Reflective and experienced workers, knowing from long-term, direct involvement which activities produce which results, are often confronted with directives which are intended to achieve objective A, which they know will not result. (This is the classic complaint of seasoned technicians taking orders from junior graduate engineers.)

The worker has knowledge which he has no legitimate right, as a worker, to express in his activity. Thereby the term "illegitimate knowledge", which operates as a syndrome because it confronts the worker with a decision of either (a) withholding his information, thereby letting the strategists and planners learn by failure, or (b) presenting the information, thereby challenging the knowledge base of the techno-methodological actors, and jeopardizing his or her own security. This problem is particularly acute when government workers are providing services directly affecting human beings.

The frustration of field service workers is a result of their awareness of the problem, the respondent and client needs, the inappropriateness or inadequacy of the program of services they are offering, and their ineligibility to comment either about policy objectives, or program designs of professional management.

This problem does not confront the tradesman (such as an electrician or plumber) to the same degree. He can be assigned to a task, effect his skills, and with the turn of a switch or a tap verify the successful attainment of the objective or assignment.

Social reality is qualitatively different. The community development officer in a poor community, or the counsellor to a teenage drug addict, can never experience the absolute success of the tradesman. They cannot create or manufacture the solution; they can only offer a human service, which will be processed as information by a respondent who, to the degree that he understands and values the offering, acts in response. The respondent action is usually a matter of degree or direction of change, but it is naive to say a social problem is solved like a road is built; rather, an adjustment or change has occurred in a complex social process.

If the mechanical workers, understanding the indeterminacy of a social situation because of proximate experience and information, perceive in the program they are to deliver an implicit misunderstanding, they are in a dilemma.

The professional managers to whom they report are officially more knowledgeable, but often the local service worker has greater awareness (illegitimate information) of the social phenomena, particularly relating to values and feelings which are difficult to communicate in the reports upon which higher authorities base most of their decisions. The frustration resulting from "illegitimate information", where a worker is aware of the inadequacy of the service, is expressed in two basic forms. Workers commonly acknowledge their understanding of the program or activity, but retreat and exempt themselves from responsibility with the following types of comments:

"I'm only doing my job."
"If you have any complaints, talk to the director."
"We're only following orders..."

Occasionally, a worker will deviate from instructions, but at high risk (on their promotion report one indiscretion outweighs many days of prudent effort). A comment typical to this type of action is "I'm not supposed to do this, but just this time...".[175] Questioning and altering the authorized directives is an implicit assumption of a techno-methodological role, involving a reformed knowledge base and a judgement to change the directed activity to a more appropriate response. As in the military system, the governmental system does not reward mechanical functionaries for this type of initiative. To change activity on the basis of their personal ideo-telic and techno-methodological knowledge is an illegitimate operation.

The cumulative effect of the problems occurring in the mechanical subsystem, which encompass the greatest majority of employees in the complex bureaucracy of government, is to relieve workers of a sense of involvement and responsibility. The combination of dehumanizing definitions, manipulation and illegitimacy of general knowledge (which is indicated by the thesis model) postulates the emergence of an ethic in which individuals are not responsible for the consequences of their actions.

Given the official limitations on the workers' wider involvement in evaluative issues regarding goals and strategies, the maintenance of an ethic of "total" human accountability in a complex, differentiated bureaucratic system is increasingly remote. The consequences to be achieved are determined by the ideo-telic actors, and the strategies are the domain of the professional tacticians and planners. If the issues relate to these components of an action, then the worker cannot be considered a legally liable participant. His system, and his part within it, can only be accountable for "mechanical" aptitude.

The functioning of the mechanical system raises serious judicial questions about the legal responsibility of a worker or operator who is denied the right to participate in the formulation either of objectives or plans for action. Since the mechanical actor is exercising a limited role in a total interacting system, his or her liability, it must logically be argued, should also be limited.

Many citizens complain that the civil service is insensitive and unfeeling in their attitude towards public clients. In view of the above analysis, this is not surprising - in fact, the system encourages, even insures, an aloof, detached manner. Many cases could illustrate the unresponsiveness of the mechanical system to human concerns.

The following case history of an incident in Alberta, illustrating a standard operation of the mechanical system leading to an action abhorent to human values and feeling, is not typical, but it magnifies what occurs to a less dramatic degree in many other situations of government programming.

CASE STUDY - THE WABASCA BABY

During April, 1973, a three-month-old native child in the northern Alberta community of Wabasca was being treated for shigella, a type of dysentry which can cause progressive diarrhea, dehydration and death, especially in children. The director of medical services for the Government of Alberta stated then[176] that about one case of shigella is reported each week from Wabasca, which is a typical isolated northern community populated largely by people of Indian and Metis origin. The disease is prevalent where conditions are characterized by contaminated water supplies, substandard living conditions and poor sanitation.

The child was brought by her mother to the regional community of Slave Lake, 65 miles south, and because of the critical condition of the child, the Slave Lake Hospital recommended transfer of the patient to the provincial capital of Edmonton.

On Saturday, April 21st, the owner-manager of the Slave Lake ambulance service started the journey to Edmonton, 150 miles south, but because of the poor condition of the child, the nurse suggested they stop at the Westlock Hospital (enroute to Edmonton). When the child was examined at this hospital, the attending doctor pronounced her dead, but advised the ambulance attendant to take the body to the Royal Alexandra Hospital in Edmonton.

The provincial coroner ordered an autopsy because he didn't know the cause of death and such information was legally required for death certification. This autopsy was carried out without obtaining consent from the mother. Under the coroner's legislation at that time, it was not necessary to receive permission from the next of kin.

An official of the Royal Alexandra Hospital had informed the mother that the body could be picked up, and that it was her responsibility to supply a suitable container for the body. On Monday, April 23rd, the mother tried to call the Department of Indian and Northern Affairs of the Government of Canada which supplies coffins for the burial of treaty Indians, but because it was the long Easter weekend and federal officials were unavailable, she was unable to reach anyone.

At the request of the mother, the Slave Lake ambulance service transported the body back to Slave Lake. On Monday evening the ambulance operator returned the body of the deceased child directly to the mother at Slave Lake, where she was staying with friends.

The ambulance owner indicated that it was a practise to bring bodies to Slave Lake in a container other than a coffin, and to deliver them to the funeral home for preparation, cosmetic treatment and coffin placement. However, the mother had requested the body as soon as possible, and the circumstances of the long Easter weekend precluded the availability of a suitable coffin and the services of a mortician (the Slave Lake funeral home was an unstaffed branch of a High Prairie firm, located 120 miles west of Slave Lake).

The hospital container, marked "Manybears", was opened in the living room. Inside lay the body of her child on simple padding. The Native People reported the mother's reaction:

> Mrs. Lillian Manybears revealed that a cardboard box was given to her by the ambulance driver. Upon opening the box, Mrs. Manybears was heartbroken by the appearance of her dead infant's body. The baby's eyes were open and its tongue was protruding from the mouth. Further examination lead to the discovery that an autopsy had been performed. The wounds of an operation were clearly evident and dried blood was unwashed from the child.[177]

An official of the Royal Alexandra Hospital confirmed the body had been returned in a standard cardboard cadaver box (designed for transport of small bodies). The ambulance driver had no casket or burial permit, so the morgue attendant did his best to make the body presentable. The body was dressed in the clothes worn when the deceased child was brought to the hospital, and hospital pads were used to line the box. A hospital official indicated in a statement that it was not the hospital's responsibility to provide caskets or repair the body after autopsies (generally the undertaker prepared the body and arranged placement in a coffin). By the time the body was delivered to the mother, further deterioration of the corpse had occurred. Drainage from the autopsy wounds had stained the body and clothing. The chief pathologist of the Royal Alexandra Hospital, commenting on the event, acknowledged that bodies which have undergone autopsies were an unpleasant sight, and stated:

> There's no attempt to make a dead body presentable. That is not a hospital's function; it is an undertaker's function.[178]

The day following the delivery of the body, the ambulance operator obtained a coffin and some flowers for the mother.[179] Aside from the shock the mother received on first examination of the baby, the public health nurse at Wabasca reported two weeks following the incident that she was treating the mother for recurring nightmares.[180] The nurse stated: "I've never seen Lillian so tearful. Nobody ever told her she would receive a dirty baby back. It is offensive."[181]

During the commentary subsequent to this incident, it was discovered this was one of a number of incidents concerning dead bodies which deeply offended native citizens. The Wabasca public health nurse indicated other mothers had wept in her office over the condition of the returned babies' bodies, including one case where the internal organs were contained in a plastic bag on the child's chest. In addition, it was revealed in the Alberta Legislature that another similar case had occurred the previous year at Fort Vermilion, a far northern Alberta village.[182]

Out of the discussion concerning this case, two general concerns of northern native people emerged, reflecting the evaluative and emotional characteristics of their cultural orientation:

1. Native parents do not generally support autopsies on their babies. They are upset by unauthorized (lacking parental consent) post-mortem examinations, and do not fully understand

the value of autopsies. The Wabasca public health nurse reflected their view: "All they know is that the babies they loved are returned cut to pieces, and they want to know why."[183]

2. Because of traditions and the great distance to morticians' establishments, natives in isolated northern communities carry out simple preparations of the corpse themselves. The bodies are washed, dressed (including a new pair of mocassins) and displayed in the home before burial. Because of this custom of family preparation of the deceased, native people want bodies returned from hospitals in an acceptable condition. When eyes and mouths are not sutured, surgical wounds are not properly washed, and limbs are not straightened, the appearance is offensive, and the relatives are very upset. They are particularly concerned that bodies, especially after autopsies, are returned clean and presentable.

When the Wabasca baby case "broke" in the press, it received national publicity. There was a wave of reaction and indignation. In the Alberta Legislature, the Leader of the Opposition demanded an investigation by the Minister of Health and Social Development.[184] The President of the Native Council of Canada urged the Government of Alberta to undertake an investigation.[185] Portions of an editorial in the _Edmonton Journal_ implicitly raised the issue of racial discrimination:

> For a white parent chances are this has never happened and never will happen. For native parents, however, it is apparently different. In recent months at least two northern Alberta Indian families have been

> subjected to this kind of inhumane treatment.
>
> One explanation for such lack of compassion is that the people responsible must assume that Indians, Eskimos and Metis are devoid of feelings, that life and death are of no importance to them.
>
> It is not enough for provincial health authorities to investigate the circumstances and, possibly, to penalize those responsible. Several policy changes ought to be made immediately as well.
>
> Although the law says autopsies can be performed without the consent of the next of kin of the deceased, surely every effort should be made to at least notify relatives in advance.
>
> As well, after an autopsy has been performed, the body should be restored to an acceptable state.[186]

An editorial columnist in The Native People linked the incident to the apathy of Canadian citizens:

> When the shocking story of how Mrs. Manybears received her deceased three-month-old baby's body in a box hit the press last week, it was very subtly hinted that the apathy of Native people might have prevented this, the second reported case, from having ever happened. The fact that other similar cases (all involving Natives) had never before been protested was made as a big play by officials to prove that negligence was on the part of the Native. The question was asked why had not the Native people done something before to correct this sort of inhumane treatment of their dead if they really care and they claim they do? And why was this incident so different from the Noskiye case in Jean D'or of last November? Nobody really kicked up a fuss over that, did they? Perhaps it was because of how the matter of the Noskiye baby was so callously dismissed by everyone involved and quickly hidden under the carpet. Perhaps it was because neither of the Noskiye parents could speak English and didn't have the money to hire a smart lawyer. And then again perhaps it was because the child was Native. ...
>
> The point is, everyone is to blame for this gross miscarriage by society. Yes, society is definitely to blame. Here is why. If the people of those small communities did not know how to go about correcting

> such adverse conditions then why didn't the public health nurses in those communities act on their behalf? They are not illiterate and have no language barrier to overcome.
>
> I can only feel sickened by the apathy in all of us as a Canadian society for allowing ourselves to be blind with eyes that see, deaf with ears that hear, dumb with minds that think and mute with mouths that talk but say nothing. We all are to blame and no different from the thousands of German people who pleaded ignorant to the extermination of the Jews in Nazi Germany.
>
> We all say it won't happen again but I wonder what our excuses will be if it does?[187]

On May 8, 1973, the Minister of Health and Social Development ordered the Alberta Hospital Services Commission to undertake an official inquiry. The summary conclusion,[188] presented July 25, 1973, was the following:

> Treatment Services
>
> The activities and procedures carried out by the hospitals and staff members are in accordance with accepted standards in this province.
>
> Maintenance of Standards
>
> It is the opinion of the Commission that the conduct of persons responsible for handling the dead body did so in accordance with the existing standards of conduct for the Province of Alberta. The request for permission to autopsy from the Chief Coroner is normal practise where the cause of death is unknown.
>
> The efforts of the hospital staff in obtaining a burial permit and their attempts to make an autopsied body as presentable as possible are noted. These activities denote a sensitivity and concern for the bereaved relatives. The Commission believes the body was handled properly and that it was placed in a new container which is manufactured and recognized as being "purpose-designed" for the temporary transportation of small bodies. It is observed that this is a practise carried out not only in this

jurisdiction, but elsewhere.

The inquiry made two basic recommendations:

> The Commission recommends that the Minister of Health and Social Development give consideration to the following:
>
> 1. Provision of mortician services following a coroner's request for postmortem and prior to the release of the body to relatives. Consideration would have to be given to exceptions for both ethnic and religious groups.
>
> 2. "Provincial Board of Health Regulations, Division 26, Regulations Relating to Funerals and to the Preparation of Dead Bodies for Interment, Cremation and Transportation" require review and clarification. It is requested that section 26-5-5 be more explicit and designate the levels of responsibility as they apply to health care facilities, morticians, or relatives claiming bodies.

On August 28, 1973, the Executive Council (Cabinet) of the Government of Alberta authorized a new set of regulations respecting preparation, transportation of dead bodies, funerals, interment and disinterment. Included was a $1,000 fine for any person who failed to comply with the regulations,[189] which provide that "no body shall be released from hospital for transportation to the next of kin after an autopsy has been performed until the person ordering the autopsy is satisfied that the next of kin have been fully informed that an autopsy had been performed and have been advised that the services of an undertaker should be employed before the body is released".

In reviewing this case from the perspective of the mechanical subsystem, it was noteworthy that no individual in the Wabasca baby case or other cases that subsequently came to public awareness acted outside of regulations and directives. In fact, some even attempted to be helpful beyond the requirement of their duties. Nevertheless, despite the involvement and awareness of public health nurses, transportation operators, pathologists, morgue attendants, hospital administrators and others, a practice that was particularly abhorent to people of Indian cultural ancestry was not changed until a major political issue occurred. This case underscores the consequence of restricting involvement of the mechanical system participants in the governmental process to roles where determining objectives, designing programs and caring about the quality of results are outside their official responsibility - their function is that of the reliable "cog"[190] in the complex machinery of government.

Reflecting on the above case history, an analyst might recall passages from Tolstoy in his great work Resurrection. The central figure, Nekhlyudov, lamenting the inhumanity shown by various officials toward some dying prisoners, states:

> ...they even prevented others from helping; because they were thinking not of human beings and their obligations toward them but of the duties and responsibilities of their office, which they placed above the demands of human relations.[191]

Later, he summarized:

> Suppose a problem in psychology were set to find means of making people of our time - Christians, humane, simple, kindly people - commit the most horrible

> crimes without having any feeling of guilt, only one solution would present itself: to do precisely what is being done now, namely, to make them governors, inspectors, officers, policemen and so forth; which means, first, that they must be convinced that there is a thing called government service which allows men to treat other men like inanimate objects, thereby banning all human brotherly relations with them; and secondly, that the people entering this 'government service' must be so conjoined that the responsibility for the results of their treatment of people can never fall on any one of them individually. Without these conditions it would be impossible in our times to commit such atrocious deeds as those I have seen today. The whole trouble is that people think there are circumstances when one may deal with human beings without love, but no such circumstances ever exist. Inanimate objects may be dealt with without love: we may fell trees, bake bricks, hammer iron without love. But human beings cannot be handled without love...[192]

The inclusion of this material in a thesis is significant when one realizes that Tolstoy used this novel to serve as a critique of the Russian social system and its human injustice.

The functionary of the mechanical system in complex society inevitably yields consequences where actions are carried out without great regard for human needs.

The resolution of the problematic features arising from the functioning of the mechanical subsystem focuses primarily on allowing individuals employed in mechanical roles to expand their involvement in the determination of system goals, and the evaluation and assessment of methodologies. They can then experience a sense of meaning and responsibility in the work they undertake, and contribute to the total performance of the system by contributing their special information in the formation of a more representative knowledge base.

In certain service areas, the contracting of special programs, normally part of a huge bureaucratic delivery system to smaller, private organizations such as the Salvation Army[193] (social services) and the Society for the Prevention of Cruelty to Animals[194] (pet control), has yielded more sensitive programs. These private organizations are less bureaucratic and balkanized, and individuals working for these groups identify strongly with ideo-telic objectives and have the opportunity for involvement in multiple roles. They often sacrifice some economic securities offered by the public service in order to provide services about which they feel personally responsible. Since they can express their values and emotions in the context of their work, and are not confined to a narrow mechanistic role, the incidence of subservient activity and the experience of alienation are potentially minimized.

In relation to large and ever-expanding governmental systems (as well as corporations) the implementation of efforts to reduce the above cited problems are few. The problems created for participants in the mechanical subsystem, and the correlate growth of unionism within the system of the Government of Alberta, generally indicate increasing difficulties.

CHAPTER VIII

THE RESPONDENT SYSTEM

In this chapter, the last of the four subsystems will be analyzed, and a case history dealing with the classic issue of the "welfare bum" will be employed. The respondent subsystem in this complex cybernetic model uniquely distinguishes human phenomena and social processes from physical, inanimate or non-volitional phenomena and processes. It is the state and condition of the social phenomena which is the object of the ideo-telic system's concern. It has been termed "respondent" because its internal nature of awareness and valuation as a basis for action is similar to the other systems, and consequently its response and reaction are not predictable from a simple knowledge of its constituent, empirical state. It has values and feelings, giving it the capacity to assess and judge, on the basis of information, before an action is taken. Physical systems, operating under monocausal laws, by contract, react consistently to specified stimuli, and have no known volitional capacity.

In a complex bureaucratic system, the respondent subsystem is composed of all the clients, consumers, recipients and other similar types who are affected, implicated or disturbed by actions emanating from the preceding mechanical system's activities and endeavors. The respondent subsystem, as a social phenomenon, may be composed of individuals, interest groups, or larger human communities.

In a complex governmental system, the respondent subsystem is composed of all the variety of participants in the society, including individual citizens, special interest organizations, and the general public. In general discussion, the electorate is considered to be the basic response group in a governmental system. This electorate, comprising the legally responsible citizens, is the final recipient of activities and programs cycling through the governmental process. The ideal view of democracy holds that this citizenry, if adequately educated and aware concerning political affairs, effectively control and determine the policies and programs they eventually receive, through the exercise of their franchise and the selection of the government by the majority will. This concept is rooted in the classical view of democracy defined by Pericles and other Greek statesmen,[195] which viewed citizenship as the full-time involvement of free men in political affairs. Both the classical and contemporary definition of democracy implicitly assume an informed citizenry. The model in this thesis implies that appropriate citizen action is not possible without adequate knowledge.

If the respondent subsystem is illustrated in this case by the citizens, the possibility of a democratic governmental system is problematic. Unlike Greek statesmen in the 5th Century B.C., contemporary citizens have neither sufficient leisure, nor sufficient time to become knowledgeable about complex social and political issues, even acknowledging their increased education and the availability of extensive new information sources. Consequently, the ability of citizens to control the expanding bureaucratic system of government is not presently evident.

The myth that the electorate, represented through elected legislative assemblies, determines the political process by establishing societal goals and objectives that are effectively implemented by public service managers and technicians is still widely taught in our schools as fact. The reality is closer to the assessment of Bohms, whose work indicated that the institution of representative democracy functions primarily to endorse decisions prepared by pressure groups and experts.[196]

The phenomenon which is the initiating situation for the respondent system is the social condition which is created or altered by the actions of the mechanical system. This situation can be an activity which is directly apprehended by the value/action centre of the respondent system, or an indirect activity which is communicated through intermediary messengers.

The actors in the respondent system, not unlike other subsystems, have an objective concerning the state of affairs created by the mechanical system, which is often expressed as an expectation of what they hope will transpire.

One major set of problems for the respondent system that is illustrated by the model results from the respondent's error in comprehending adequately the existing state of affairs. In earlier discussions, it was noted that increases in the complexity of the observed phenomena frustrate knowledge formation. Many activity sectors in contemporary western society are becoming so complex and technically sophisticated (for example, nuclear energy systems, international monetary exchange systems, organized urban crime) that even direct and open experience by clients, consumers and victims is no guarantee of comprehension and knowledge. The high levels of intelligence, time and memory that full knowledge of society's complex endeavors assumes, makes the maintenance of an informed citizenry difficult. For this type of dilemma, open information about governmental activities is no resolution - it is the inherent complexity transcending the information processing capacities of the individuals and groups which give rise to knowledge failure.

In theoretical terms, two types of reactions are suggested:

1. Respondents reduce information to the level of limited intelligence, time and memory by ignoring, losing or disregarding vital aspects of a situation. The resultant information set is an erroneous simplification of the social reality, and consequent actions based on this inadequate knowledge will not accomplish the desired objective.

Easton discusses this problem of false perception which occurs, according to his analysis, when members of the system rely "upon perception, untempered by experience or objective appraisal, as a means of interpreting the nature of the stimuli in the feedback processes".[197]

2. Respondents acknowledge that their limitations in intelligence, time and memory prevent them from adequately understanding, making impossible informed reaction. The result is withdrawal from participation in the subsystem, which can be understood as a "privatism syndrome", where one reduces their field of activity and endeavor to simpler, smaller fields. The actors may now experience a greater sense of certainty concerning their knowledge and action, although a theoretical analysis would only concur if in fact the participants had withdrawn to a simpler cybernetic system. The decrease of membership in American political parties may partially illustrate this type of action.

The general model indicates that the second major source of deficient knowledge formation results from manipulation and distortion during presentation, transmission and primary receptory stages in complex communication processes. This is particularly critical in subsystems with an absence of parity information streams. Without independent information to verify reports and statements, decision-making participants are vulnerable whenever control, censorship or manipulation is possible by other actors serving interests subversive to those of the respondent system values and goals.

In complex governmental process, this is manifest in the classic problem of political propoganda.[198] The respondent system, functioning as an electorate, confirm or deny political power to partisan parties and individuals. The politicians, operating as the ideo-telic system, must maintain support among the respondents to continue their mandate. This relationship between support and manipulation has the following possible expressions:

(1) The respondents receive accurate information about a public-serving government, and react with support.

(2) The respondents receive accurate information about a self-serving (partisan or corrupt) government, and deny support.

(3) The respondents receive manipulated, derogatory information (from opposition interests) about a public-serving government, and deny support.

(4) The respondents receive manipulated, laudatory information (from the government) about a self-serving government, and react with support.

In the third case, governments often react critically to the media for distorting their programs and the state of social and economic conditions. The problematic issue in this case concerns censorship of the media and the maintenance of a free press.[199]

The fourth case is the classic issue of propoganda by the governing authority. Critical for effective manipulation is a precise understanding of the value orientation and action preferences of the citizens as respondents. This is accomplished by the use of social science surveys to discover attitudes, concerns and objectives of the electorate. (In Alberta, sophisticated panel studies were used by the Social Credit party during their last election while in power, utilizing sophisticated political polling programs developed in the United States. In this particular case, the highly accurate information was largely ignored by suspicious "traditionalists" who suspected social scientific findings.)[200]

Lack of access to this type of information, since good surveys are expensive and therefore provide an advantage to those in power controlling large financial resources coupled with censure and information control given lack of a parity stream make possible the manufacturing, largely by the media, of images and information sets which are preferred by the respondents. This partially accounts for the great anxiety in government concerning secrecy and confidentiality.

Both an accurate knowledge of the respondents and information control are essential for effective propoganda. The manipulation of messages to the respondents takes many forms, including three classic tactics often used by officials to answer queries from public or special client groups:

1. The "whipping boy" - some person is made to bear the blame for another's mistake (formerly, a boy educated along with

and taking punishment in place of a young prince or nobleman). An illustration of this is the blame placed on lesser officials by President Nixon for the Watergate cover-up.[201]

2. "Red herring" - something intended to divert attention from the real problem or matter at hand.[202]

3. "Straw man" - a person used by another to disguise his own activities.[203]

A classic manifestation of the cybernetic nature of the subsystem is seen in the political process of gaining and maintaining oneself in public office. To function successfully in a democratic organizational process, the aspiring politician has the following options:

1. He can present an accurate image (physical attributes, values, emotions) about his real characteristics, if it is consistent with the respondent's model definition of who should receive a vote.

2. If some of his characteristics are deficient, he can substitute false information so that his image yields knowledge that is consistent with the respondent's model definition.

3. If he has some negative or stigmatic characteristics, he can withhold information regarding these unacceptable elements so that knowledge concerning him is consistent with the model held by the subsystem.

4. If some change occurs so that his competence becomes questionable (illness), this information must be "covered up", or the respondent will not give support, based on the lack of correspondence between knowledge and model definition.

The complexity and impersonality of contemporary community experience increases the possibility of information manipulation, particularly in program areas where the respondent does not directly encounter a situation, but nevertheless has strong, valued images which form judgements about the present state of affairs, social trends and future conditions. Phenomena such as unemployment, inflation and crime are typical.

The possibility of a politician portraying a non-existent state of affairs or condition as real or imminent, in areas where the respondents have no effective parity information, allows powerful control. The information sets that can be presented by shrewd and knowledgeable politicians anticipate the value/action sets of the respondents, and accordingly a manipulator can denounce undesirable conditions (held as negative images - prejudices - by the respondents) and uphold cherished states and activities (held as positive images by the respondents), in both cases gaining support from the respondents. Without verification, these presented information sets need not be representative of real situations. Threats of Communist takeover in western democracies,[204] and evasive non-responses by government security agencies which argue the necessity for keeping secret the reasons for particular defensive activities,[205] illustrate the vulnerability of the respondents who have no alternative information sources, and are denied experience because the activities are either off limits, as is the case of military experimental centres, or they deal with hypothetical future states such as a political takeover or an economic crisis.

The following case history from a leadership campaign for the Social Credit Party and Premiership of Alberta will outline the problem of manipulated or, conceding the benefit of the doubt, erroneous presentations. This case is nearly symbolic, for it deals with that classic image, the "welfare bum", that has remained a basic political propoganda weapon in the North American reactionary's arsenal for many decades.

CASE STUDY - THE WELFARE BUM

The "welfare bum" is an image whose popular definition has widespread consensus. The image is a representation of an individual who is physically and mentally able (fact), an irresponsible idler who expects financial support from the state with no intent to work or contribute to the community (value), and who is shiftless, lazy and indifferent (affect). Kupfer, in his Edmonton Study, outlined some of these popular concepts:

> A large number of myths have grown up about these people and appear to be quite well accepted by Edmontonians. "People on welfare are there because of their own personality weaknesses." "People on welfare

> are lazy and no good." "People on welfare are sponging on society, and welfare is encouraging them not to work." "People on welfare enjoy their status and the free ride that the rest of society is giving them." "People on welfare primarily represent certain ethnic groups such as Indians, and primarily live in certain areas such as the Boyle Street area."[206]

The value/action set held by many respondents relating to the image of the "welfare bum" incorporates an indignant, punative mood. The problematic issue, from the perspective of the model, is not the definition of the image, but the accuracy of the image.

During the 1967 leadership campaign for Premier, one of the leading contenders was reportedly gaining considerable candidate support, particularly in rural constituencies, with a "get tough" plank on "welfare bums". There was a promise to balance the provincial budget (then operating with an estimated 6% deficit) by removing all the "bums" from income support programs.

This policy was a serious issue for another front-running candidate, who was identified as a strong supporter of improved social programs for rehabilitating the disadvantaged. The 1,750 delegates to the leadership convention, mostly hard-working, tax-paying, low- and middle-income citizens, had no positive sentiments toward "welfare bums". They were now informed by a cabinet minister[207] that welfare payments to individuals who could work were a major contribution to the government's deficit. The delegates could not verify what ultimately was specialist information held partially confidential by the Department of Public Welfare. In addition, many of the delegates who lived in rural communities and farms had only local, limited encounter with "welfare bums", and therefore lacked a provincial perspective. The delegates were, however, presented with a description of a supposedly existing state of affairs which they strongly opposed.

Because of the positive response being received by this platform proposal in the early stages of the campaign, policy advisors associated with another ranking candidate, who eventually won and became Premier, undertook a detailed analysis of welfare payments, with the cooperation of officials in the Department of Public Welfare, to determine the legitimacy of the "get tough" platform.

The image discovered by a statistical analysis of payments was incorporated in a press release, which included the following statements:

> When discussing the paying of public money to people on welfare, the best place to begin is with the facts. The program in the Department of Public Welfare which provides income for dependent recipients is called Social Allowance. The following diagram shows the breakdown of Social Allowance recipients as at July 31, 1968:
>
> The three largest groups receiving Social Allowance are (1) mothers with dependent children, (2) physically or mentally displaced persons, and (3) the aged. Allowances paid to these groups are generally accepted as reasonable and just by the public. However, public acceptance is much more in question when the Social Allowance program attempts to meet the needs of the smallest of these groups, the "unemployed

> employables". This is the group usually caricatured by many of the critics as "lazy", "freeloaders", and "malingerers".
>
> For this group of "unemployed employables", the total budgeted expenditure for the 1968/69 fiscal year was $5,600,000, or approximately 9% of the total Department of Public Welfare budget (estimated at 59 million dollars). In relation to the total provincial budget for the 1968/69 fiscal year, this group of "unemployed employables" will only account for .6% (6/10 of 1%) of the total government expenditures (5.6 million dollars out of 893 million dollars).
>
> These facts place in perspective the amount of public funds presently spent on the able bodied unemployed.
>
> Except for perhaps a few recipients, this group of unemployed receiving Social Allowance is composed of individuals with family responsibilities who would like to be economically independent. The reasons they are often unemployed is that they lack necessary skills or education, or lack access to employment opportunities. For this group of approximately 2,000 families, nothing would be solved for the unemployed fathers, their wives and their children by simply cutting them off welfare, without some alternative program for their social economic development.[208]

This counter information set, which functioned as a parity/verification stream in the respondent system's communication stream, effectively undermined the "get tough, balance the budget" plank, and exposed the fiction of the other candidate's information set. A secondary consequence was the enlightenment (reforming of previous social image) of a wider public outside the convention delegates. This was evidenced by the following excerpts from an editorial in a major daily newspaper:

> MAKING SOME SENSE ABOUT PUBLIC WELFARE
>
> At last a politician, and no less a politician than a Social Credit leadership candidate, has discarded the

'cheap speech' about public welfare in favor of a reasoned approach to the matter.

Politicians for years have been entertaining audiences with passionate condemnation of 'bums' on welfare. Talk on this subjuct is particularly cheap since welfare recipients are not likely to fight back, biting the hand that feeds them. And 'everybody' knows that the welfare rolls are loaded with cheaters.

But Municipal Affairs Minister Harry Strom has dared to be different and, besides offering a far more credible approach, has produced an interesting set of statistics.

It turns out that this summer the 'unemployed employables' on Alberta's welfare rolls made up only 10.9 per cent of the total. The rest were mothers with dependent children (32.9 percent), the aged (25.4) and the physically or mentally disabled (30.8).

From what many politicians have said, cutting the 'bums' off welfare would instantly solve all the government's money problems. But, as Mr. Strom also points out, spending on the 'unemployed employables' amounts to only 6/10 of one percent of total government spending.

Mr. Strom is just as anxious as anyone, of course, to get the 'unemployed employables' off the welfare rolls and goes on to suggest a way to do it:

"I am proposing that to meet the needs of this group, an 'employment opportunity program' be established which would replace present welfare patterns by establishing programs of job training, adult education and work activity. This employment opportunity program will be developed in cooperation with business and industry, labor and key departments of the government of Canada."

What, then, is the answer to the 'welfare problem' - to heap more scorn and harassment on welfare recipients or to help them solve the problems which are keeping them on welfare and which could easily keep their children and grandchildren on welfare as well?

After decades of failure with the first approach, it's about time Mr. Strom's approach was given a try.[209]

In this new, corrected information set, there was still the possibility that the "unemployed employables" (10.9%) were composed of these "welfare bums". This category of welfare recipients became the focus of a subsequent research study.[210] It is interesting to note that the credibility of the "welfare bum" image deteriorated even further. Rather than lazy, shiftless individuals, many of the cases could only be properly represented as disorganized and depressed persons caught in a constellation with other individuals functioning as a multi-problem family. Of these, many responded positively to employment opportunities when the rehabilitation programs dealt with the entire family situation.

In summary, the above case study illustrates the impact of a manipulated information set and a corrected information set flowing to the control/decision centre, in this case composed of respondents who were taxpayers concerned about welfare funding. They were vulnerable to misrepresentation and, consequently, reacted in error, as long as there was no independent information function in the communication process.

Summary

Members of the respondent system hold valued orientations and objectives which they relate to the activities and programs delivered by the governmental process. Their understanding of the emergent conditions and consequences which either support or undermine their interests determine the direction and effectiveness of their subsequent decisions and actions.

If there is open access to the situation in question, either through observation or experience, the deficiencies in knowledge which arise will reflect limitations in the participant's intelligence, time or memory.

If, however, information regarding programs and activities is controlled, classified, or distorted in some other manner, then the formation of an adequate information set will require the operation of a parity information/verification process.

Having reviewed some aspects of knowledge formation in the respondent subsystem, an important question deals with the possibility of increasing the awareness of respondents. The ability of the respondents to make decisions based on valid knowledge is related to the reduction and elimination of the two malforming factors - error and manipulation.

Error Resolution

The reduction of error by participants in the respondent subsystem requires, in relation to any specific phenomenon, a level of intelligence, time and memory adequate for comprehension and communication of that situation. Consumer organizations, protesting individuals and special interest groups have dealt with this problem by educational efforts which concentrate their intellectual energies, increase their time commitments, and improve their background information. This has the function of increasing intelligence, time and memory. The thesis model implies, however, that educational and other awareness operations cannot overcome the inability of individuals and groups to comprehend social phenomena whose complexity is so great as to exceed human analytical capacities. Nor, from the perspective of the cybernetic model, does knowledge resolution assume the direction of decision, which results from value action sets, and not primarily information sets.

To illustrate a government program which operated partly to increase citizen knowledge, a brief analysis will be made of the Community Development program which operated in Alberta during the 1960's.

Community Development emerged as a powerful social action movement during the Fifties, basing its philosophy on ideas of greater citizen involvement and participatory democracy. In the Alberta program, Community Development officers, who worked outside the departmental line structure of government, were assigned primarily to communities characterized by high levels of poverty. By utilizing a variety of public education and social action strategies, they encouraged citizens to expand their awareness of community problems and potentials, and to exercise their political power to improve their social and economic conditions.

A basic tenet in the Community Development philosophy discouraged C.D. officers from assuming political leadership themselves. Their role was that of facilitator and advisor, helping the local people to learn about themselves, their community resources, the poverty problems, the economic potentials, and the political process. Where this program was effective, local citizens altered their self-images and expanded their knowledge of the community.

In terms of the respondent system model, they reduced the error in their information set concerning their community and the socio-economic situation in which they were located. Often, the consequence of this process was a renewed political activism, with community leaders challenging governmental officials on the adequacy of their programs, and demanding new and altered programs more appropriate to their conditions.

Governmental response to their demands and requests were varied. Some cabinet ministers, whose ideo-telic goals incorporated the people's aspirations, welcomed and encouraged this reawakening process in the local citizens. Other ministers resented the C.D. officers and the C.D. program, viewing it as a source of political agitation. This group was defensive of their own establishment priorities and programs, and did not appreciate challenges from the local communities.

A third group, certain senior civil servants, were strongly opposed to Community Development officers, or any public servants, facilitating a community political process which often criticized the effectiveness of departmental programs in meeting the local needs, particularly in poverty regions. This group often responded by using their specialist knowledge to intimidate the local activists, challenging the accuracy of their information, and criticizing local suggestions for remedial action. Local citizens were in the strongest position when they described their own conditions and experience, but were most vulnerable when they suggested complex industrial solutions, such as the building of a pulp mill to create employment.[211]

The Community Development program was eventually redefined, and then disbanded by a process of attrition.[212] The major contributing factor to its tenuous existence was its threat to the official political leadership and representation, who felt their information set was the legitimate base for government decision, and who were often challenged by increasingly knowledgeable citizens, newly aware as a result of the Community Development program.

Distortion Resolution

The second malforming factor is manipulation. The reduction of manipulated and controlled information requires programs which offer respondents independent information sets. In the classic American tradition, this has largely been the function of the free press. Because the structure of the Republican system does not make the President as Chief Executive answerable on a regular basis to a Parliament (as in the British and Canadian system), the independent "watchdog" function has been the burden of the media. This was dramatically reaffirmed in the Watergate episode, where reporters of the Washington Post operated as a parity information process.[213]

In Canada, and Alberta, the "free press" also has this capacity. There seems a danger, however, that the press and audio-visual media, as they increasingly are owned by corporations committed to generating high profits, engage in their own form of information manipulation. Since advertising revenue rates are generally established by audited circulation statements,[214] news which increases circulation, and which does not anger major advertising clients, has the most utility for high profits. Independent and uncensored information about social issues is then increasingly vulnerable to replacement by news which focuses on sensational events, which represent another manipulative manner of reforming representative information to enhance an objective not correlated to the priority needs and goals of the respondent system.

The media situation in Alberta during the late 1960's and early 1970's was dominated by publications originating in Eastern Canada, or owned and controlled by groups located outside the province. Consequently, there was little detailed and comprehensive information available to Alberta citizens about government programs operating in the province. To remedy this situation, a pilot project was implemented, in which a government-published magazine was delivered free to every residence in Alberta. Survey results indicated these magazines increased empirical information about the province and government services.[215] The articles, however, at best were neutral and certainly not critical of departmental activities. This information effort, while it could be considered as a parity stream checking erroneous facts, did not function as an independent source free of political manipulation (the last of the four issues was, in fact, closely supervised by a Cabinet minister).

In a modern, complex social system such as functions in Alberta, the ability to check manipulation requires, in addition to parity messages, a verification process to adjudicate conflicting representatives. With the exception of a few independent commissions and public inquiries, this seldom occurs. The cumulative effect is to weaken the effective functioning of the respondent subsystem, and to deteriorate the cybernetic process as it flows from subsystem to subsystem.

CHAPTER IX

THEORETICAL CONCLUSIONS

The general objective at the outset of this thesis was to develop new understanding about bureaucratic systems of organization by utilizing cybernetic concepts, focusing on the critical function of information processing and knowledge formation. A general conceptual framework was presented, and elaborated as a complex cybernetic model composed of four subsystems. The model was then applied as an analytical tool in the discussion of four cases taken from the history of a major governmental system.

As the research progressed, it became increasingly apparent that the flow of information and action from the ideo-telic system to the techno-methodological system to the mechanical system to the client-respondent system, which feeds back again to the ideo-telic system, thereby completing a cycle, is a complicated, highly vulnerable cybernetic process. In the reality of governmental systems, this process operates with growing inefficiency as organizations become larger and assume increasing bureaucratic characteristics of hierarchy, specialization and impersonality.

From the analysis in this thesis, it is concluded that a complex organizational system is fraught with difficulties if the knowledge which forms at each stage, on which decisions and actions are based, is not composed of representative information concerning the initiating social phenomena. The critical variable has been the morphology of knowledge in complex bureaucracies. The formation of representative information sets, the elements of knowledge, is jeopardized by two processes. One is the erroneous formation of knowledge, resulting from deficiencies in intelligence, time and memory in relation to the complexity of the phenomena. The other process is malformed information sets resulting from deliberate information distortion and manipulation, emanating from the activity of subversive value centres in the system's communication process.

The theoretical insights that have emerged in this cybernetic critique will be summarized in two ways. First, five general propositions will be outlined, and second, a paradigm of models will be developed.

General Propositions

The following propositions encompass some major theoretical conclusions resulting from the thesis. In relation to hypotheses, they are considered preliminary statements. With subsequent clarification of specific indicators and conditions, they could aid the generation of testable hypotheses. They are stated as follows:

1. If the control/decision centre of the social system has no independent information to check or verify the absence of error or distortion in the information received, then there can be no assurance that any given set of actions will achieve a specified objective and no assurance that feedback information represents the real consequences of action. Only if the information forms as complete and accurate knowledge is there any possibility of goal attainment and awareness of consequences.

2. As society and social interaction patterns increase in complexity, success in goal attainment will be directly related to an adequate increase in the intelligence, time and/or memory of the control/decision-makers. Conversely, as an individual or group decision-maker has a relative loss in intelligence, time and/or memory, there will be an increase in errors, and a decrease in knowledge and goal attainment.

3. If the control/decision centre of a social system receives information communicated through a stage whose participants act in relation to a value/goal set which is different from the control/decision centre's value/goal set, then information fidelity is problematic due to possible deliberate distortion, and can only be confirmed by independent information. If there is an increase in the plurality of value/goals held by participants in the system, there is a decrease in the probability of system goal attainment.

4. If information in the communication process passes through two or more stages, the control/decision centre cannot assume accurate knowledge (representative information) without a parity information operation. As the communication stages decrease between decision-maker and phenomena, there is an increase in the probability of information fidelity.

5. To the degree that the information set used by the control/decision centre represents social phenomena as physical phenomena by ignoring or eliminating evaluative or affective information, the subsequent action will be experienced by respondents as "dehumanizing".

Paradigm

It becomes possible to summarize the theoretical issues by a modelling process in which the problematic elements are progressively and systematically subtracted from the cybernetic system. The result is a paradigm of models, beginning with the most complex social cybernetic organization, and ending with the most simple and least problematic social cybernetic model. They are outlined below:

MODEL V

This model (Figure 6) has the following features:

(1) Multiple subsystems

(2) Pluralistic value centres within total system (value

conflicts)

(3) Multiple stage information transmission within subsystems

(4) Alterant/subversive value centres within subsystems

This conceptual framework represents the expanded, complex model developed and discussed in this thesis. It seems appropriate for analysis of large governmental, industrial, religious and other systems, operating in the world today, which are characterized by vast, hierarchical bureaucracies, and competing values and ideologies.

MODEL IV

This model (Figure 7) assumes the elimination of feature 4 (Alterant/subversive value centres with subsystems). This is accomplished by the operation of parity information and verification processes.

This model is descriptive of social systems whose values and ideology comprise a unified and rigid view which is generally unamenable to basic change and competition. Totalitarian political systems and military organizations often approximate Model IV in their form. Characteristic of these organizational systems are highly developed mechanisms to check, monitor and verify information, and the absence of individual rights to privacy. Through tribunals, informants, electronic surveillance, cross-examinations, and excommunications and expulsions for deviant members, subversive activity is severely limited.

MODEL III

This model (Figure 8) assumes the reduction of feature 3, the multiple stages in the information transmission stream. This is accomplished by the reduction in the number of hierarchical levels and participating actors in the communication process.

This model relates to social systems where simple subsystems are still differentiated by functional areas of activity. Hinterland communities composed of small, separate interacting organizations and interest groups, internally devoid of hierarchical communication stages, but pursuing diverse goals, illustrate the basic features of this model.

MODEL II

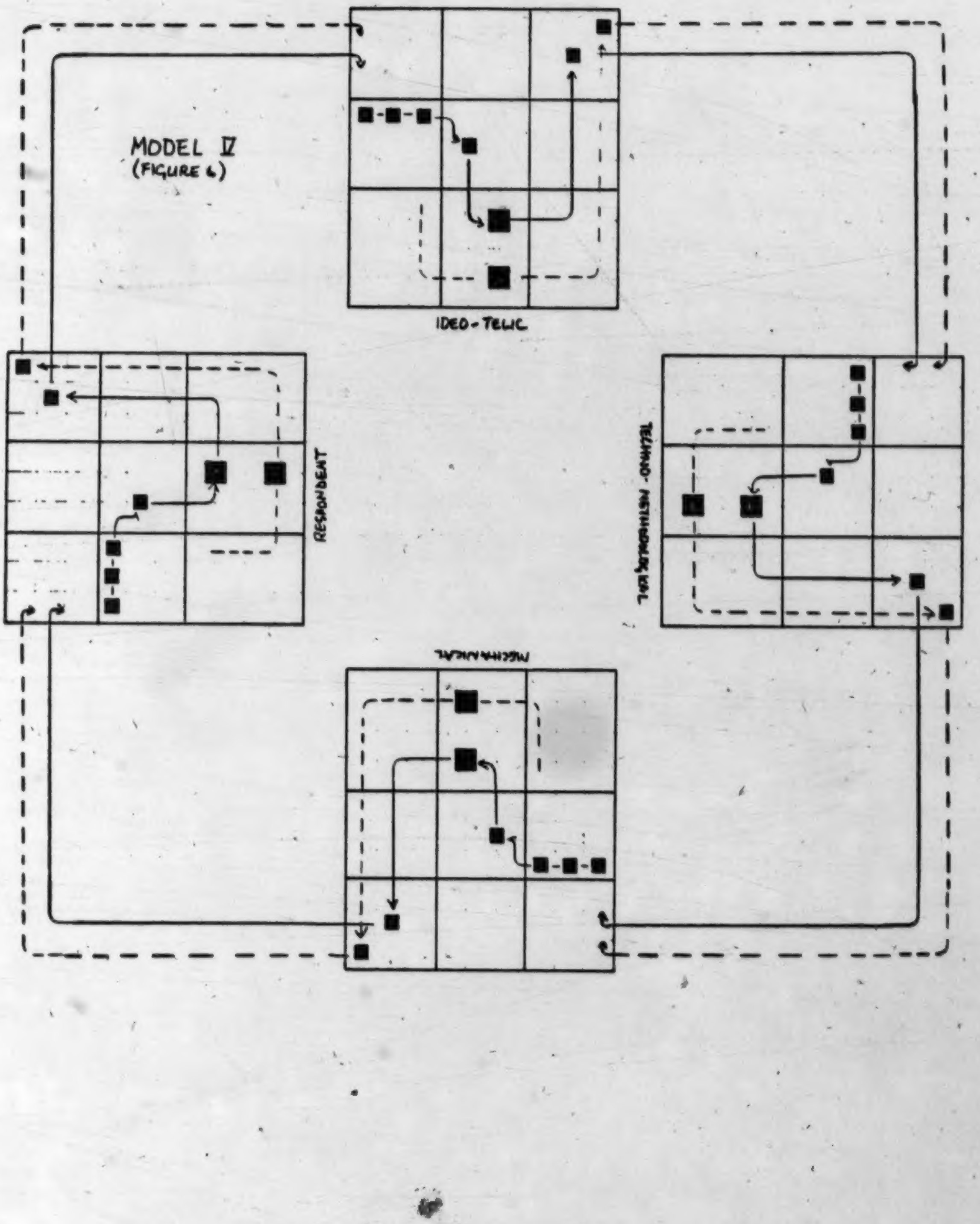
This model (Figure 9) assumes reduction of pluralistic/conflicting value centres within the total system. This is accomplished by value integration and concensus formation among the subsystems.

This model describes the totally integrated community, whose members are assigned to different functional tasks, all operating on the basis of a common value system. The communes of socialist and communist countries (China and Cuba), and the total communities of religious sects (Hutterites and monastic settlements) are representative. They operate on the principle of open, direct communication, and voluntary value consensus, which greatly reduces communication errors and information manipulation.

MODEL I

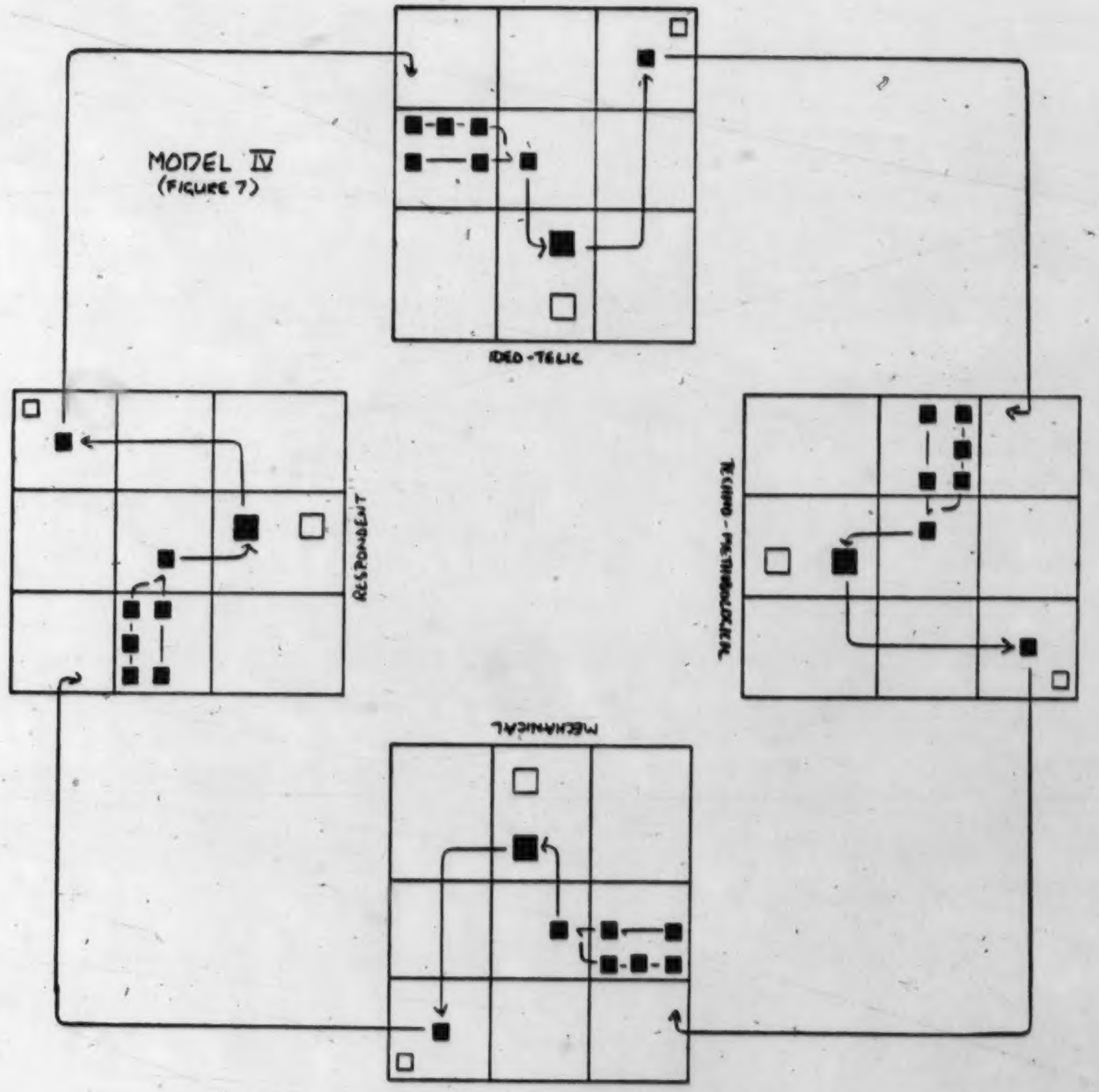
This model (Figure 10) assumes the reduction of feature 1, the number of discrete subsystems within the total system. This is accomplished by expanding the participation of the actor or actors in more than one, and ultimately all four functional areas.

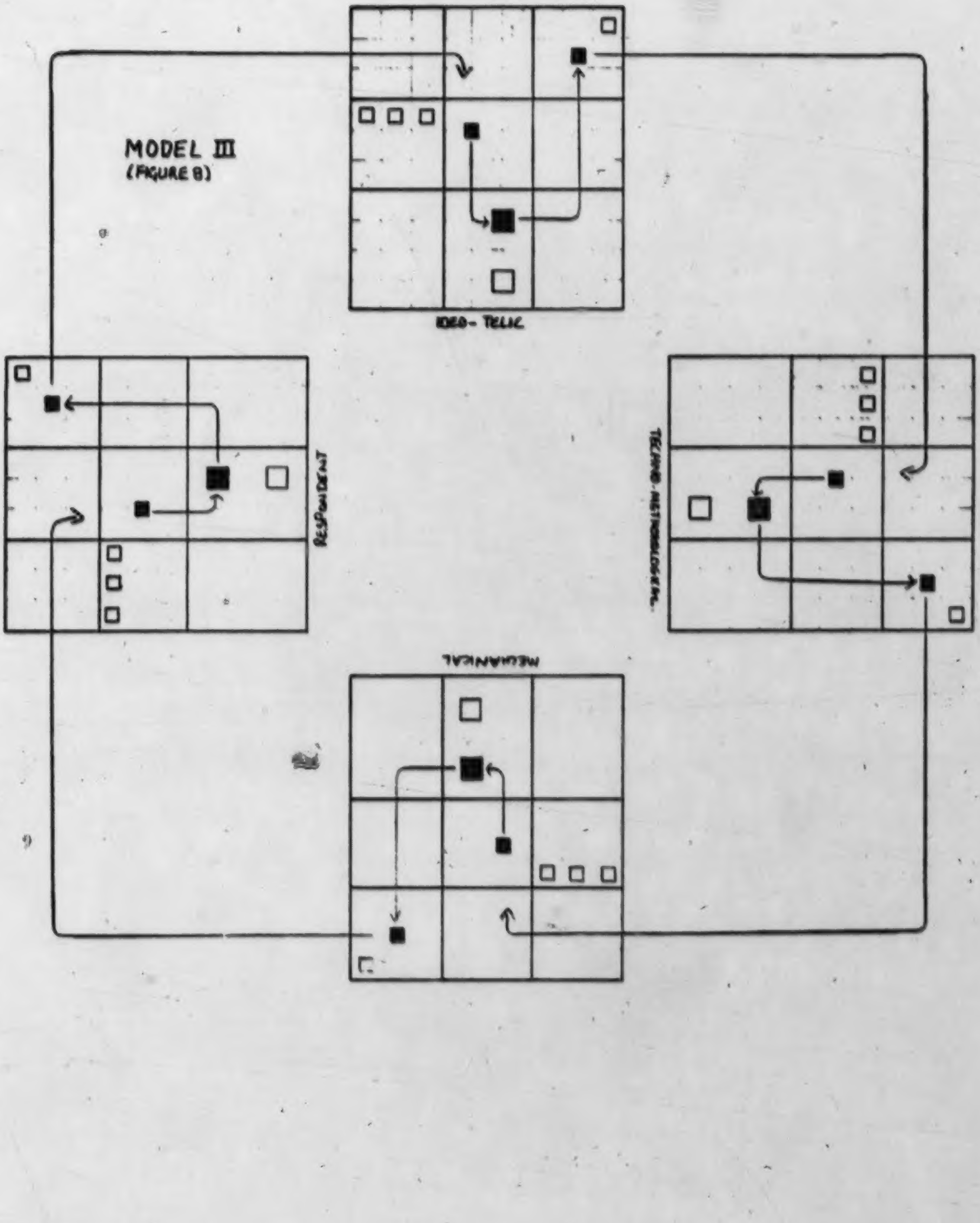
The simplist model of the paradigm, where the major cybernetic deficiencies resulting from the organization of the system are eliminated, describes a small social group carrying out the total range of tasks required for their survival as a system. The frontier family or the pioneer group, where all members, according to their ability, share in all phases of their socio-economic existence, typifies the model. What remains problematic for the cybernetic process at this level, the intelligence, time and memory of the participants, is no longer a function of social structure and form, but a function of the member's social-psychological characteristics and the nature of the environment.



MODEL Ⅴ
(FIGURE 6)

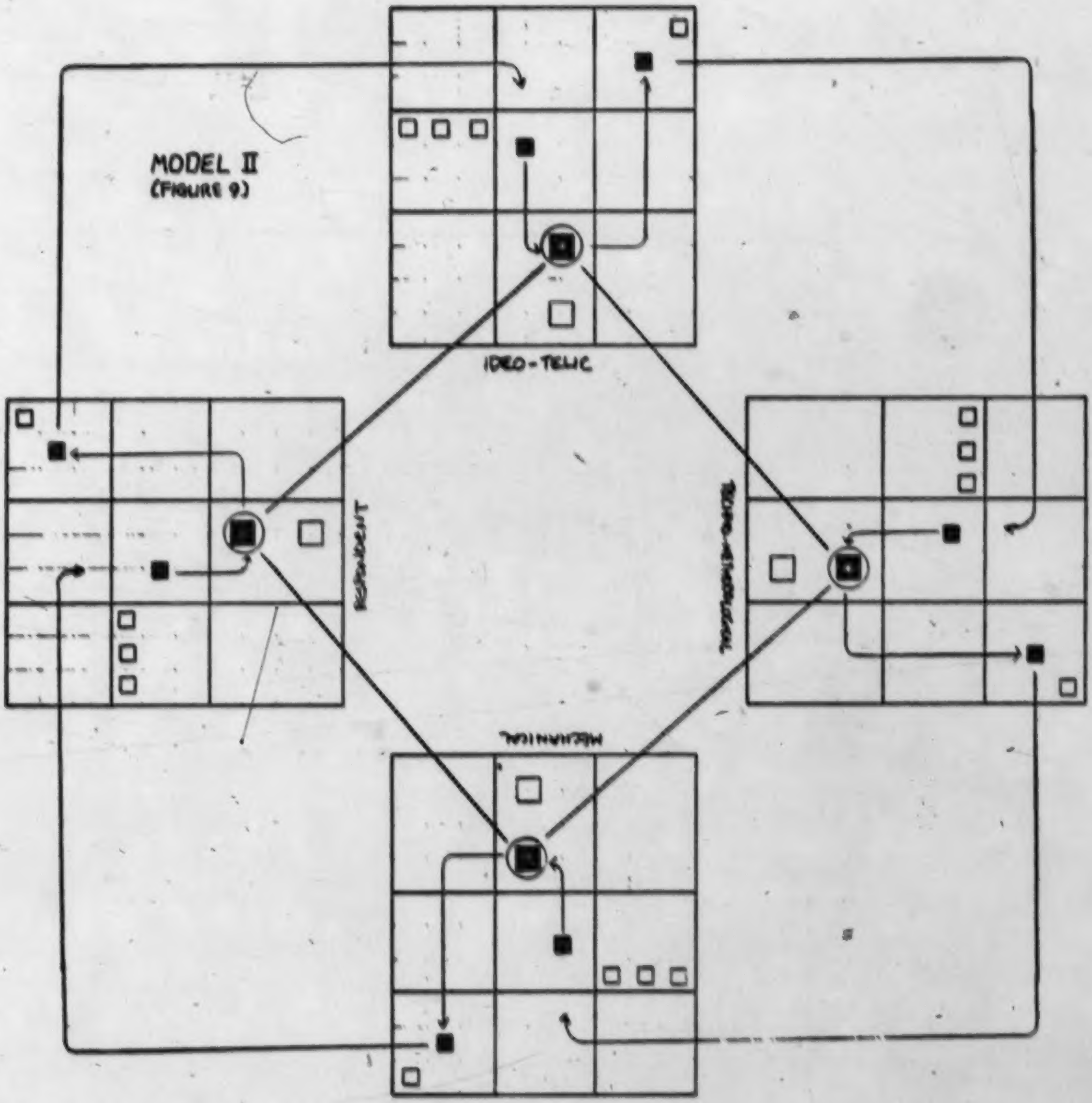
IDEO-TELIC
RESPONDENT
TECHNO-METHODOLOGICAL
MECHANICAL


MODEL IV
(FIGURE 7)
IDEO-TELIC
TECHNO-METHODOLOGICAL
MECHANICAL
RESPONDENT



MODEL III
(FIGURE 8)

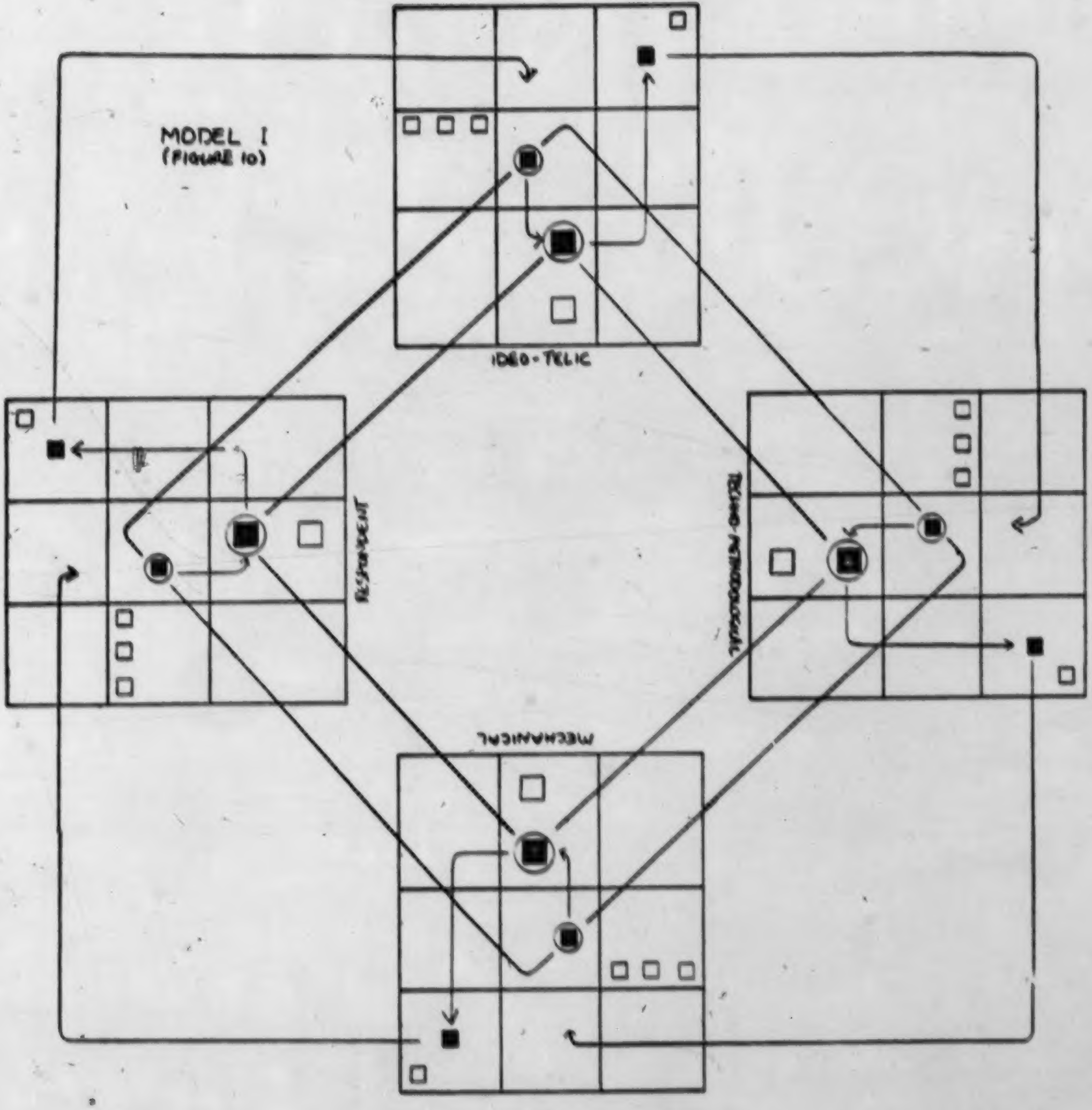
IDEO-TELIC
RESPONDENT
TECHNO-METHODOLOGICAL
MECHANICAL



MODEL II
(FIGURE 9)

IDEO-TELIC
RESPONDENT
TECHNO-ETHOLOGICAL
MECHANICAL

MODEL I
(FIGURE 10)


IDEO-TELIC
RESPONDENT
TECHNO-METHODOLOGICAL
MECHANICAL

The above paradigm, which originated in a theoretical exercise that progressively eliminated problematic features in knowledge formation, makes it possible to use a cybernetic perspective, not only as a tool for developing understanding of complex bureaucratic systems, but as a general orientation that allows analysts to relate a whole range of organizational forms. The insights that have emerged from an inquiry of bureaucratic process at the Model V level are now useful, not only for describing important aspects of government systems, but by development of the paradigm, they are helpful for cybernetic analysis of a diversity of organizations, ranging from other complex institutional systems, such as a community, to simple systems, such as small farm cooperatives.

The paradigm also allows the organizational analyist to integrate into a single theoretical perspective certain elements which were previously properties of discrete theoretical formulations. The ideo-telic system has a relationship to theories concerning decision-making; the techno-methodological system has a relationship to studies on management and administration; the mechanical system has a relationship to human relations and other work-related theories, and the respondent system has a relationship to the political analyses of the conflict theorists. The "Action" theorists, focusing on the orientation of actors and the meaning of role behavior, can be discussed in terms of motivations of participants in the subsystems, while the functionalist's analysis of systemic needs can be discussed in terms of interaction patterns operating at the macro systems level.

As a general systems model, it will add to the developing body of literature attempting to understand, from the perspective of cybernetic concepts, what are the essential processes in social organizational life.

The above cybernetic models also allow a hopeful avenue for discourse with theorists in other disciplines who are dealing with the complexities of the modern world. Goldsmith, in his critique of the cognitive deficiencies of modern science, states:

> This means that we become ever less capable of understanding our relationship with the constituents of our changing environment...
>
> Thus, whereas our palaeolithic ancestors had no difficulty in understanding what was their relationship with the cave bear and the woolly mammoth, we have no means of understanding what are the implications for us of subjecting our children to X-rays, of permitting a nuclear power station to be built in the vicinity of our homes, of allowing supersonic transport to erode the ozone belt which shields our planet from the sun's radiation, of cutting down the world's remaining stands of tropical forest, of countenancing, in fact, the industrialisation process itself. Few people understand the full implications of these things, and hence, few are capable of reacting or influencing society to react adaptively to the strange new happenings which are rapidly transforming the world we live in.
>
> The result, of course, is that our scientifically influenced behaviour, which, as we have seen, remains based on subjective foundations, becomes increasingly unadaptive.[216]

While no one longs to return to the rudimentary life of the palaeolithic dweller, it is possible to point out that the direction societies must pursue, if they are to become more knowledgeable and adaptive, is toward less technical complexity and smaller, more comprehensive socio-economic systems.

This perspective also has relevance for macro theorists, such as those reporting to the Club of Rome. In the Second Report, titled Mankind at the Turning Point, the "counter-intuitive" concept of Forrester's[217] is further explored:

> ..."counter-intuitive" behavior of a system is...the consequence...of disorder in the system which, as a corollary, leads to a loss of intuitive understanding of relevant portions of the system which the individuals concerned with that portion of the system have developed through experience and scientific inquiry. Counter-intuitive behavior is therefore a sign that the system is in a crisis and is displaying abnormal behavior. ... What is needed is not to change the path of development by "outside" steering into the direction of further growth or no-growth. What is needed is an internal restructuring of the system to restore the "normal" condition where the subsystems are in mutual harmony so that each of them, by solving its own problems, is contributing to the solution of the whole. Such a restructuring leads to the path of organic growth.[218]

The "internal restructuring" envisioned could be partly informed by the above paradigm.

In summary, our theoretical inquiry indicates that a social system, whose dominant features include hierarchical bureaucracies and a plurality of values and ethics, is operationally a highly complex cybernetic system, and therefore highly vulnerable and less efficient in the attainment of critical societal objectives. Cybernetic efficiency and, consequently, system viability, will require social reorganization that moves toward smaller, more integrated and more wholistic forms.

While this analysis has not defined specific hypotheses that allow for prediction and control, it has promoted understanding in the field of social organization, by offering a coherent and systematic interpretation of a complex social reality. This follows within the "neo-idealistic" tradition[219] advocated by social scientists who question the possibility of classic, physical scientific explanations of social phenomena. Their orientation, which is shared by the writer, is to develop means by which parts and wholes can be integrated, and organizational elements in diverse fields can be compared and analyzed within a system of general concepts. The general propositions and systems model that have emerged in this thesis expand understanding by providing a conceptual framework that has descriptive, heuristic and comparative value. This is a necessary stage in the ongoing development of sophisticated cybernetic theories of social organization.

CHAPTER X

IMPLICATIONS FOR PUBLIC POLICY

This dissertation originated in a concern about large, bureaucratized government. The findings, accordingly, should provide commentary on the existing governmental process and suggest possible modification in public policy.

The governmental system in the Western world is slowly and surely reaching gigantic and incomprehensible proportions. From the inside, everything is legalistically defined in regulations, accounting systems or operations, and there exists a sense of order. From the outside, however, where complex socio-economic processes are ongoing, the consequences and effects of this formal governmental process appear inadequate, uninformed, and over time, inconsistent and chaotic. The economy is not under control, crime continues to increase, and psychological illnesses are epidemic. The popular saying, "Too little, too late," as descriptive of belated government awareness and action, has foundation in fact. There is no denying that government brings order, but it appears to be a kind of "ordered ineptitude" from the perspective of human and social need.

The following descriptive phrases could apply to bureaucratized governments:

"...they appear to have been cold-blooded, slow-

> moving, and unintelligent...and less able to adapt themselves to the new conditions of life brought about by gradual changes..."220

The quotation, interestingly, is part of a description of Dinosaurs taken from a 1912 edition of the Americana Encyclopedia.

Of the variety of models brought to the analysis of this modern problem, it appears the cybernetic orientation will find increased utilization by analysts. Max Nicholson, in his study of the misgovernment of modern Britain, writes:

> The relationships between government and the governed are often incorrectly viewed simply in terms of superior and inferior status, or of something approaching a chain of command from "top" to "bottom" in a thin democratic disguise. A more suitable model would be of a flow process of exchange of signals and of energy which works both ways but is often blocked or distorted. As the basic structure has never been coherently designed for such a purpose, and has been modified with little regard ro it, that can only too easily occur. Moreover the scale of the load to be carried has far outgrown the original provision, rather like an Asian city with a current population of two million people depending on water-pipes and sewers designed for 300,000.
>
> The scale and nature of these blockages have been aggravated by other factors, which call for more serious study than they have had. Although a two-way flow process is demanded for the management of a great modern state by inherent social-psychological principles, and is ostensibly conceded by the democratic set-up, there has been a deliberate attempt to operate the System behind the scenes as an essentially hierarchical, one-way mechanism. As this is fundamentally at variance with the alleged modern constitution it naturally produces a nonsense situation in terms of social engineering, which was only tolerable so long as the electorate was largely unsophisticated and apathetic, and the System appeared to know what it was doing and be capable of achieving it. Now that both these preconditions are ceasing to

> be fulfilled an overt breakdown, followed by general loss of confidence, is the natural and inevitable outcome.[221]

However, no great insight is required to pronounce negative judgement on modern governments. It is more insightful to offer an analysis which indicates measures that will improve the functioning of the governmental process. From the perspective of this thesis, this involves increasing the efficiency of the entire system as a cybernetic process, and concentrating on the removal of those features which limit adequate and accurate information. Simply stated, complex governmental systems do not, to paraphrase Nettler, "know what they are doing".[222] Because of the contingence in the formation of representative information sets throughout this total governmental communication process, the knowledge utilized is deficient, and the consequent actions flowing from this defective cybernetic process are incapable of yielding valued and sought-after goals.

1. Complexity and Diversity

This thesis raises serious questions about the viability of pluralistic, democratic societies whose primary institutions are large, complex, centralized and inflexible. Drucker writes:

> There is mounting evidence that government is big rather than strong; that it is fat and flabby rather than powerful; that it costs a great deal but does not achieve much. There is mounting evidence also that the citizen less and less believes in government and is increasingly disenchanted with it.[223]

The bigness and complexity in government is the accumulated effect of increasing nationalization of the private sector, the centralization of municipal services traditionally under the jurisdiction of local authorities, and the takeover or replacement of many voluntary social and education service organizations by governmental agencies. This "imperialistic drive" has been accommodated by power-seeking political leaders, citizens demanding more and more public services, and utopian social planners who believed that selfish, private interests in society could be eradicated by turning all social and economic jurisdiction over to a strong central government, where central planning would realize the greatest common good.

The present societal reality is big governments, at civic, provincial and federal levels. Elaborating on the theme of sickness in government, and the disenchantment that he asserts may be the most profound discontinuity in the world, Drucker continues:

> Modern government has become ungovernable. There is no government today that can still claim control of its bureaucracy and of its various agencies. Government agencies are all becoming automomous, ends in themselves, and directed by their own desire for power, their own rationale, their own narrow vision rather than by national policy and by their own boss, the national government.
>
> This is a threat to the basic capacity of government to give direction and leadership. Increasingly policy is fragmented, and policy direction becomes divorced from execution. Execution is governed by the inertia of the large bureaucratic empires, rather than by policy. Bureaucrats keep on doing what their procedures prescribe. Their tendency, as is only human, is to identify what is in the best interest of

> the agency with what is right, and what fits administrative convenience with effectiveness. As a result the welfare state cannot set priorities. It cannot concentrate its tremendous resources, and therefore does not get anything done.
>
> The great achievement of the modern state, as it emerged in the seventeenth and eighteenth centuries, was unified policy control. The great constitutional struggles of the last three hundred years were over the control powers of the central government in a united and unified nation. But this political organ, no matter how it is selected, no longer exercises such control.[224]

The model of this thesis suggests that as the social phenomena increase in complexity, knowledgeable governing is only possible if there is a correlate increase in intelligence, time and memory by the system's control, the decision-makers.

If it is assumed that society is now so complex, and the governmental process so large and complicated that the level of adequate knowledge required has surpassed the normal comprehension capacity of any human being, then two theoretical possibilities emerge:

(1) Increase the intelligence, time and memory of government decision-making centres, or

(2) decrease the complexity of the social phenomena.

The first possibility, increasing intelligence, time and memory, manifests itself in two directions:

1. Modifications can be made in the structure and functioning of the ideo-telic decision-making body, primarily the Cabinet, so that they operate as a cohesive, knowledgeable

mind, aware not only of the large complexes they have legislated into being, but of the consequences for all other areas of the system. A study by Robert Gordon of leadership and decision-making in large corporations would not be hopeful of Cabinet reform, given ministers' commitments to many other tasks besides decision-making:

> For the most part, the board of directors (which represents the owners) as a formal group has surrendered its function of active decision-making in the large corporation. "Outside" directors function, if at all, primarily as financial and business advisors. The value of advice by competent and interested directors should not be minimized. But the job of actually making the decisions which are the essence of the leadership function rests primarily with the executives themselves. Those who seek to restore the board as a true decision-making body misread the problem of large-scale management organization. The withering away of the active leadership function of the board is unavoidable. It is merely a reflection of the fact that large-scale business leadership can be performed efficiently only by a single group of working officials willing and able to devote the necessary time to the business.[225]

Cabinet ministers do not have enough time. In addition, they are often deficient in contextual memory (experience and education). So, even arguing for their intelligence capacity (which is largely underrated by pundits), increasing the I-T-M of the Cabinet appears problematic. Some modification would help. The chief executive and his ministers should be served by a powerful research and information mechanism, maintained distinct from the departmental, public service administration. To delay this type of improvement, out of fear either of "Svengalis" or political criticism, only results in further control by the managerial elite, as Lenski observed:

> ...the growing power of the managerial elite is a function not only of its ability to rig elections, but also of the growing complexity of the large corporation and all that entails. The management of a large corporation has become demanding, full-time work, and those who are unwilling or unable to devote full attention to it, as is true of most owners and directors, soon find that control passes to those who can.[226]

2. A second theoretical option is to develop a "mega-mind", which exercises total control on the basis of comprehensive knowledge. This could conceivably take the form of a super-human being. Surprisingly, the emergence of a brilliant, benevolent dictatorship is occasionally suggested in popular discussion as a possible future governing style that could bring social cohesion to a turbulent and disordered society. The question this raises is the ultimate limits of human capacity to understand socio-economic complexity. While medieval dictators effectively governed, and contemporary dictators such as Franco in Spain maintained social order, it was within the context of less complex social systems, where totalitarian values persisted, and social structure was simply stratified. To assume that the most competent human being could provide coordinated leadership in a pluralistic, diverse and free social system rests on theoretical rather than practical arguments, unless one concedes that the dictator would have to impose a totalitarian, rigid system.

Under totalitarian conditions and limited human freedom, the social system is less complex. Effective governing would result, then, not from the human "mega-mind" of a dictator who has the capacity for greater knowledge than others, but from the enforced simplication of society through totalitarian measures. All the dictator can offer, it appears, is not increased brilliance, but more order, and only through the reduction of pluralism and diversity.

The mechanical form of the "mega-mind" is the super computer that integrates all human memory, has unlimited intellectual processing power, and consequently allows enough time. This science fiction dream may yet become a reality. At present, however, cybernetic theoreticians in computer development are yet not able to develop "thinking" in terms of form, field and pattern. The algorithmic form of processing (discussed earlier in Chapter IV), now the basis of computer programming, is more analogous to a game than a thinking, evaluating, feeling human individual or group. This limitation remains the counterpoint to computer advocates who, misperceiving the complex morphology of information in social cybernetic processes, call for greater computer application in decision-making centres.

The second major possibility to cope with the present crisis is to decrease the complexity of the social phenomena. This requires the development of simpler cybernetic systems, in the direction suggested by the paradigm in the previous section. This should not be confused with geographical decentralization, often practised by governments to cope with regional political pressures. The simplification of the phenomena requires breaking down ideological, jurisdictional and economic units as well as possible geographical decentralization. This possibility, to increase understanding and comprehension of life by operating in a less complex social system, is bounded by the reality of the existing large, centralized governmental systems. Schumacher, a British economist, defines the situation as follows:

> Nobody really likes large-scale organisation; nobody likes to take orders from a superior who takes orders from a superior who takes orders... Even if the rules devised by bureaucracy are outstandingly humane, nobody likes to be ruled by rules, that is to say, by people whose answer to every complaint is: 'I did not make the rules: I am merely applying them.'
>
> Yet, it seems, large-scale organisation is here to stay. Therefore it is all the more necessary to think about it and to theorise about it. The stronger the current, the greater the need for skilful navigation.
>
> The fundamental task is to achieve smallness within large organisation.[227]

To achieve this "smallness" in the midst of "bigness" would require a form of "decentralized federation". To accomplish this, senior levels of government (both provincial and federal) would return control to lower level organisations, where there are possibilities for participants to be more knowledgeable, more involved and more responsible. Being less complex, and operating in a more limited field of phenomena, they comprise a more efficient cybernetic system. Schumacher has encompassed their decentralization in what he cites as the Principle of

Subsidiary Function:

> A famous formulation of this principle reads as follows: "It is an injustice and at the same time a grave evil and disturbance of right order to assign to a greater and higher association what lesser and subordinate organisations can do. For every social activity ought of its very nature to furnish help to the members of the body social and never destroy and absorb them." These sentences were meant for society as a whole, but they apply equally to the different levels within a large organisation. The higher level must not absorb the functions of the lower one, on the assumption that, being higher, it will automatically be wiser and fulfil them more efficiently.[228]

From the perspective of the thesis model, this principle contains an implicit cybernetic logic.

The application of this "decentralized federalism" to the lowest organization scale would alleviate many frustrations inherent in the existing bureaucratic government system. It could be readily expressed in two ways: (1) by the transfer of public tasks from the large departmental administration to small, non-governmental organizations (such as church-based social service agencies, or small limited-dividend and cooperative housing groups); and (2) by the return of many central decision-making activities affecting local communities to local authorities and local interest groups.

A more idealistic expression of the reduction of complexity and the creation of simple, cohesive systems is the return to a smaller, simpler, more comprehensive community experience. The classic expression of this is the Hutterite colony, still functioning after 400 years of external societal pressure as a simple Christian theocratic communist community.[229] In the previous paradigm, its cybernetic form approximates the Stage II model, where there is an absence of alternative value orientations, and members participating in the various functional areas communicate directly with each other. The resultant reduction in both information error and information distortion yields a more reliable and accurate knowledge base. It is interesting to note that the colonies, when their membership increases beyond approximately 150 members, split to form new colonies. Their leaders have discovered from many decades of experience that personal communication and understanding and group harmony become difficult when the colonies become too large. In the Hutterite system, where colonies are small and economies are generally limited to agricultural production, it is possible for Hutterite leaders to maintain comprehensive knowledge concerning the operation of their social system.

For individuals with a desire to understand what is happening in their community, and to experience a social life of involvement and knowledgeable political participation, contemporary urban communities are a frustrating experience, appearing as mindless systems where no one seems to fully understand what is happening, and nobody is in a position to exercise control.

The appeal to experience a more meaningful community life is strong. The resurgence of small town residency and the growth of alternate lifestyle communes is a recent phenomenon.[230] If participating individuals recognize that the cybernetic efficiency of small communities is related to simple activities, direct communication and value cohesion, they can enhance the viability of the community by stressing these elements. This is expressed most powerfully in the commune movement instituted by the Mao Tse-tung regime in Communist China.[231]

Public policy should recognize that the "small community" movement brings strength to a pluralistic society, facilitating lifestyle options and providing a more meaningful human experience than is generally possible in large, complex cities. New legislation should be developed to encourage the reduction of societies' complexity with all its attendant ills, to smaller, and possibly more understanding and meaningful, social community forms.

2. Uniqueness of Social Phenomena

This thesis assumes a basic distinction between social and physical phenomena. The composition of physical elements excludes evaluative and affective properties. Social phenomena, unlike physical phenomena, are not deterministic and predictable in their actions - their unique human properties give them a volitional and emotional character. When these latter qualities are not acknowledged in the information base for organization and programming, the planning is implicitly dehumanizing, and the working model is mechanistic and deterministic. Large governmental systems still operate largely on a mechanistic model, organizing for people as if they were only physical properties. This bias, as was indicated earlier, is rooted in the techno-methodological spheres of the senior civil service where management, order and predictability are keystones.

The penchant for "dehumanizing" in the design of government delivery systems is essential to the concept of prediction and planning. A program can be planned to attain a future objective, if the behavior of the target phenomena are predictable. The whole notion of professional management, developing methodologies and strategies to gain a predetermined result, is problematic if phenomena are unpredictable and volatile. In fact, passivity or non-response is ideal as an element in deterministic systems.

The payment of mechanical participants to "dehumanize" themselves and act like machines is essential for many governmental programs where the implementing instruments must operate predictably and reliably. The function served by the technician, mechanic, operator, serviceman and laborer, to be a non-reflective instrument, or machine, is clearly revealed in the following statement by Drucker:

> Yet the unskilled mass-production worker will be seen as an engineering imperfection. He has a job only because we have not taken the trouble to apply enough knowledge to his work so as to "program" it for the machine. A machine can do any mechanical operation once we really know and understand it - the only

question is whether it is economical or not.[232]

In a great many cases it is not economical, either because we do not produce enough units or because the job of finding out is exceedingly complex, whereas doing the work is simple and requires little learning or instruction.

It is understandable for a person to function as a machine in the context of a physical task - placing wood in a fireplace, hammering a nail, or driving a car fall into this category. The difficulties arise in governmental systems when the person has no other role opportunities other than to function as a machine, or when he is in turn treated like a machine. Both problems are very common in bureaucratic models, management forms and methodologies originating in technical fields of endeavor. This misunderstanding is evident in the term "social engineering", and partially explain the failure of sophisticated aerospace firms in California, who brilliantly engineered space flight successes, but could not ameliorate complex urban problems which they encompassed under the term "civil systems".[233]

The two problems cited above, precluding individuals from non-mechanistic roles, and treating humans like machines, must be alleviated to improve the cybernetic process in complex social organization.

From the cybernetic paradigm outlined earlier, expanding the role of the traditional mechanical system participants requires their involvement in the other areas beginning with the techno-methodological subsystem. Their expanded involvement in evaluating and selecting technologies and methods, in addition to implementing them as an operator or other mechanical functionary, acknowledges their human nature by providing some meaning to their activities, and also serves cybernetic efficiency by expanding the knowledge base of the other systems. This expansion of the actors' participation to include functioning in more than one subsystem is particularly critical in social service programs, where the most sensitive information is held by the service workers (teachers, nurses, social workers) who are traditionally officially restricted from serious participation in policy formulation, program design and implementation strategy. (They influence policy through their associations and unions, but this is because their size categorizes them as a powerful element in the political respondent system, not because the system appreciates the special knowledge of social service workers.) Present North American departmental systems in government are extremely rigid and hierarchical, which hinders effective performance in social programming. Greater experimentation, expanding the involvement of the worker, is required to discover more cohesive and knowledgeable organizational structures. The widely publicized lead of Volvo, the car manufacturer in Sweden, to establish work teams that can innovate their own assembly techniques as a replacement for the assembly line,[234] may encourage governmental management to develop more responsive and innovative program environments for governmental services.

The second problem, treating humans as mechanistic objects, is prevalent in every human service area of large governments. The first indicator, mentioned in an earlier chapter, is the bureaucratic structuring of government departments and agencies on an indiscriminate and uniform basis, generally regardless of the program's objective. The governmental departments that serve human needs - education, health, culture, social development, labor and others should reflect in their location, management style or organization structure more responsiveness and sensitivity than departments serving non-human sectors (such as mines and minerals, or highways). However, they all seem to operate under the same critieria, with physical characteristics determined by standard practices of the Public Works department, and organizational structure generally standardized by the Personnel Administration authorities. The obsession with standard regulations and procedures across the entire governmental bureaucracy, without significant distinctions between service sectors, is designed to control potential internal problems, and is detrimental to effective performance in every area of government programming where there is a respondent subsystem. A critic of the Government of Alberta bureaucracy succinctly illustrated the above discussed insensitivity by noting that the marriage license bureau (where civil ceremonies were often performed) and the venereal disease clinic operated under the same department and were both housed in similar looking "shabby" offices in the same region of the city.[235]

The second indicator of governmental officials' failure to appreciate the nature of social phenomena is expressed in the area of social and economic planning. Politicians should have learned by now that it is possible to promise and deliver physical projects - roads, swimming pools and buildings - but that it is futile to promise specific results where the issues deal with responsive phenomena such as crime, alcoholism and culture, and economic insecurity. In all these human areas, governing authorities and professionals must develop a more accurate knowledge about people through a continuing social interaction process. Since the clients of the governmental system function as a respondent subsystem, the cybernetic process cannot succeed without their full participation. It is only possible for a department or agency to "deliver" services and assume the respondents' reaction if intimidation, passivity or ignorance exists among the clients. Otherwise, the services, to be acceptable to the respondents' needs, must be based on continuing interaction and consultation, since values and feelings continually alter as an adaptive mechanism to environmental changes. This could be termed a "cyber-dynamic morphogenetic process" where programs originate in the information process which is continually in operation. The grand utopian scheme of the remote planner cannot function in this process. What is required is continuing consultation to insure that the information is constantly reformed to represent an ever-changing social reality. This process is at the heart of community development programming (presently out of favor with many governments), which never advocated any more than what the partisan political system promised but failed to give - participatory democracy.

3. Parity Information

Many citizens in Western countries no longer trust or believe explanations offered by government, nor are they confident that government leadership is entirely aware of what is occurring in society. Circumstances leading to the resignation of Chancellor Brandt of West Germany and President Nixon of the United States only sustain these views.[236] The cybernetic model has highlighted the function of parity information as a mechanism to check for information error and manipulation. Its systematic application to governmental systems would alleviate much of the aforementioned prevailing opinion about public information and knowledge. One methodology, providing greater citizen access to government files, would afford the possibility of independent verification of governmental activities, which would encourage politicians to become more honest in their replies. In North America this innovation might suggest revolutionary consequences. In Denmark, however, it operates quietly as a right of citizens to inspect any government files relating to incidents in which they are personally implicated.[237]

The problem of insuring fidelity and adequacy in the information sets which comprise the knowledge of the phenomena used by control/decision centres necessitates independent information and verification possibilities.

The anxiety of individuals concerning personal information filed about them in public agencies is justifiable. Even acceding government the right to maintain personal files, a public procedure must be established enabling a citizen to verify his or her personal records. This is not only a matter of civil rights, it is also essential to improve the proficiency of the governmental system, which ultimately yields negative feedback whenever erroneous information is processed.

A more complex requirement is the operation of parity information streams for each subsystem. For the legislative and executive level of government, independent information and research activities must be continually funded. Above all, they must be free of political and bureaucratic control. The integrity of research reports undertaken by departmental in-house researches, particularly when evaluating a departmental program, must, on theoretical cybernetic grounds, remain suspect until independently verified. The more complex the social system the more vulnerable the cybernetic process, and the more critical the parity function. Organizations such as the Economic Council of Canada, and the now defunct Human Resources Research Council of Alberta (closed for quasi-political reasons) are the types of independent information mechanisms that are critically needed to maintain the integrity of information in large governments. The criticism of duplicating in cost only arises when there is ignorance concerning the function of parity information, or when there is concern to maintain partisan control of a public institution.

At the techno-methodological level, there must be similar parity operations. In Canada, information formation and the decision-making process are largely protected from independent inquiry by the practise of placing ministers as chief administrators of departments, resulting in ministerial accountability in the legislative assembly for issues belonging to the techno-methodological system, thereby largely shielding senior public management operations. The distinction between ministerial and administrative functions, as is the case in Sweden (the minister and the department are separate entities) where the minister can initiate public hearings concerning the program management, would eliminate the present excessive confidentiality by disassociating techno-methodological knowledge from political accountability.

In the mechanical subsystem, parity information is problematic. The issuing of orders and instructions in the form of duplicate documentation, so that the actual operator can confirm verbal directives received from the supervisor, provides a manner of parity process. The more critical issue concerns union control and security of the worker, who is penalized for questioning or challenging union controlled directives. The government practise of accrediting unions to exclusive territory, and manditory membership, undermines the parity information process in the mechanical subsystem.

The respondent subsystem is the home ground of the "free press", that classic concept which modern newspapers, radio and television insists is still expressed in their operations. Given the profit orientation of large media owners, one can question the integrity and commitment of these organizations to independent news. Following a national senate inquiry into the press in Canada,[238] the daily newspapers established their own council to police their own membership on accuracy and honesty of reporting. The papers would have been more convincing if they would have established an independent tribunal. As it now operates, the publishers form the council, and ultimately their security does not rest with the respondents, but with their investor-owners. A more effective check on information is the operation of a number of press and media outlets in a competitive environment.

The respondent subsystem, in addition to the free press, is protected with parity information streams by the growth of strong and enlightened consumer and special interest groups. Organizations such as the Committee for an Independent Canada,[239] the National Farmers' Union,[240] and the earlier cited Canadian Mental Health Association,[241] broadcast and publish continually, maintaining in their respondent system a basis for verification and increased accuracy in the emergent information sets. Deterrent policies to the development of these and other similar types of groups, (such as postal regulations which charge non-profit publications higher mailing rates than commercial publications) are ultimately dysfunctional for the cybernetic process. The possibility of a complex system, functioning on the basis of reliable, representative information is dependent on effective parity mechanisms operating throughout the entire system. The alternative is a complex of actions based on error and manipulation, which inevitably undermine the entire governmental process, from which no citizen escapes.

Summary

In this final chapter, the insights that have emerged from the cybernetic analysis undertaken in this thesis have been applied to public policy issues. By conceptualizing social process in terms of information formation, or alternatively as the thesis title states, the morphology of knowledge, we can improve our understanding of a complex and highly bureaucratized world. It is hoped that this new understanding will, as the thesis implies, yield more effective and appropriate citizen action to ensure the continued expression of human concern and freedom.

FOOTNOTES

1. Cf. A. Gouldner, "Metaphysical Pathos, and the Theory of Bureaucracy," *American Political Science Review*, 49 (1955), pp. 496-507.

2. Peter L. Berger, Brigitte Berger, and Hansfried Kellner, *The Homeless Mind*, New York: Vintage Books, 1973, p. 41.

3. *Ibid*., p. 56.

4. Cf. Daniel Bell, *The Coming of Post Industrial Society*, New York: Basic Books, 1973, p. 9 ff.

5. Robert K. Merton, *Social Theory and Social Structure*, London: The Free Press of Glencoe, 1957, pp. 195-224.

6. Governments are particularly concerned about information control. For example, all public servants employed by the Government of Alberta are required to swear an oath of secrecy, and are liable to a $500 fine for unauthorized dissemination of official information (*Revised Statutes of Alberta, 1970*, Chapter 298, Section 20, as amended 1972).

7. At the University of Alberta, the General Faculty Council, during 1973, passed and later repealed, a policy of open access to academic files.

8. Warren Breed, *The Self-Guiding Society*, New York: The Free Press, 1971, pp. 35,36.

9. Examples are Gouldner, *Patterns of Industrial Bureaucracy*, Michels, *Political Parties*, and Selznick, *TVA and the Grass Roots*.

10. Cf. Gideon Sjoberg, and Roger Nett, *A Methodology for Social Research*, New York: Harper & Row, 1968, p. 265 ff.

11. Cf. Karl Marx, *Writings of the Young Marx on Philosophy*

and Society, Lloyd Easton and Kurt H. Guddat (eds.), New York: Doubleday, 1967, pp. 152-202.

12. Cf. Max Weber, *The Theory of Social and Economic Organization*, New York: Free Press, 1964.

13. Cf. Robert Michels, *Political Parties*, Glencoe: Free Press, 1949.

14. Max Weber, *op. cit.*, p. 311.

15. F. Taylor, *The Principles of Scientific Management*, New York, 1911.

16. Cf. David Silverman, *The Theory of Organizations*, London: Heiremann, 1970, pp. 176-177.

17. Cf. Nicos P. Mouzelis, *Organization and Bureaucracy*, London: Routledge & Kegan Paul, 1967, p. 97 ff.

18. F.J. Roethlisberger, and William J. Dickson, *Management and the Worker*, New York: John Wiley & Sons, 1964.

19. William F. Whyte, "An Interaction Approach to the Theory of Organization," in Mason Haire (ed.), *Modern Organization Theory*, New York: Wiley, 1959; and George C. Homans, *The Human Group*, New York: Harcourt Brace, 1950.

20. N.J. Demerath, and Richard A. Peterson (eds.), *System, Change, and Conflict*, New York: The Free Press, 1967, p. 313 ff.

21. Merton, *op. cit.*, pp. 51-53.

22. Talcott Parsons, *The Social System*, Glencoe: The Free Press, 1951.

23. Nicos P. Mouzelis, *Organisation and Bureaucracy*, London: Routledge & Kegan Paul, 1967, p. 153 ff.

24. Cf. John Rex, *Key Problems in Sociological Theory*, London: Routledge & Kegan Paul, 1961, p. 111 ff.

25. See discussion relating equilibrium, homeostatic and adaptive models, in Walter Buckley, *Sociology and Modern Systems Theory*, Englewood Cliffs, N.J.: Prentice-Hall, 1967, pp. 23-40.

26. Cf. H.A. Simon, *Administrative Behavior*, New York: Macmillan, 1957, p. 3 ff.

27. Ludwig von Bertalanffy, *General System Theory*, New York: George Braziller, 1968, pp. 30-52.

28. Norbert Wiener, *Cybernetics, or Control and Communication in the Animal and the Machine*, Cambridge, Mass.: The M.I.T. Press, 1948, pp. 95-115.

29. Cf. Harold K. Hughes, "Utopias and Cybernetic Cultures," in Edmond M. Dewan (ed.), *Cybernetics and the Management of Large Systems*, New York: Spartan, 1969, p. 8.

30. Karl W. Deutsch, "Toward a Cybernetic Model of Man and Society," in Walter Buckley (ed.), *Modern Systems Research for the Behavioral Scientist*, Chicago: Aldine Publishing, 1968, p. 390.

31. Kenneth E. Boulding, "General Systems Theory - The Skeleton of Science," in Buckley (ed.), *Modern Systems Research*, *op. cit.*, pp. 3-10, originally published in *Management Science*, 2 (1956), pp. 197-208.

32. Karl W. Deutsch, *The Nerves of Government*, New York: The Free Press of Glencoe, 1963.

33. Walter Buckley, *Sociology and Modern Systems Theory*, Englewood Cliffs, N.J.: Prentice-Hall, 1967.

34. Andre Ampere, *Essay on the Philosophy of Science*, 1838.

35. Norbert Wiener, *Cybernetics*, Cambridge, Mass.: The M.I.T. Press, 1948.

36. Ludwig von Bertalanffy, _op. cit._, p. 161.

37. Ludwig von Bertalanffy, "General System Theory - A Critical Review," in Buckley (ed.), _Modern Systems Research_, _op. cit._, p. 18.

38. Jagjit Singh, _Great Ideas in Information Theory, Language and Cybernetics_, New York: Dover Publications, 1966, pp. 92-93.

39. _Ibid._, p. 92.

40. Karl W. Deutsch, "Toward a Cybernetic Model of Man and Society," in Buckley (ed.), _Modern Systems Research_, _op. cit._, p. 391.

41. George Herbert Mead, _Mind, Self and Society_, Chicago: University of Chicago Press, 1934, p. 512.

42. Kurt Lewin, "Feedback Problems of Social Diagnosis and Action," in Buckley (ed.), _Modern Systems Research_, _op. cit._, p. 441, originally published in "Frontiers in Group Dynamics," Part II-B, _Human Relations_, (1947), pp. 147-53.

43. _Ibid._, p. 442.

44. David Easton, "A Systems Analysis of Political Life," in Buckley (ed.), _Modern Systems Research_, _op. cit._, p. 435.

45. _Ibid._, p. 434.

46. _Ibid._, p. 436.

47. _Ibid._, p. 434.

48. Norbert Wiener, _The Human Use of Human Beings_, New York: Avon Books, 1950, pp. 25,27.

49. Walter Buckley, Sociology and Modern Systems Theory, Englewood Cliffs, N.J.: Prentice-Hall, 1967, p. 174.

50. Buckley (ed.), Modern Systems Research, op. cit., p. 383.

51. Deutsch, The Nerves of Government, op. cit., p. 11.

52. See Max Weber, The Theory of Social and Economic Organization, tr. by A.M. Henderson and Talcott Parsons, New York: The Free Press, 1964.

53. Michael A. Arbib, The Metaphorical Brain, New York: Wiley-Interscience, 1972, p. 87 ff.

54. Ibid., pp. 93-94.

55. Theodore M. Mills, The Sociology of Small Groups, Englewood Cliffs, N.J.: Prentice-Hall, 1967, p. 20.

56. Deutsch, op. cit., p. 259 ff.

57. Arbib, op. cit., p. 90 ff.

58. See Erving Goffman, The Presentation of Self in Everyday Life, Garden City, New York: Doubleday Anchor Books, 1959.

59. Donald M. MacKay, Information, Mechanism and Meaning, Cambridge, Mass.: The M.I.T. Press, 1969, p. 42.

60. In the Canadian federal election held June 25, 1968, the Liberal party won, electing 155 members (out of 264 seats in the House of Commons). The Progressive Conservative party elected only 72 Members of Parliament.

61. David Easton, A Systems Analysis of Political Life, New York: John Wiley & Sons, 1965, p. 133.

62. Ibid., pp. 128-29.

63. *Ibid.*, pp. 413-14.

64. Singh, *op. cit.*, pp. 36-38.

65. Datatran Manual, Automix Keyboard, Inc., Bellevue, Washington, 1963.

66. Deutsch, *op. cit.*, p. 285.

67. *Ibid.*, p. 258 ff.

68. See Part VI in Buckley (ed.), *Modern Systems Research*, *op. cit.*, pp. 317-382.

69. *Annual Report of the Department of Public Health*, Edmonton, Alberta: Queen's Printer, Province of Alberta, 1966, p. 161.

70. *Ibid.*, p. 145.

71. Ernest C. Manning, *A White Paper on Human Resources Development*, Edmonton, Alberta: Queen's Printer, Province of Alberta, 1967, p. 83.

72. *Alberta's Health Services Program*, Alberta Department of Public Health, Edmonton, 1966, p. 24.

73. *Annual Report of the Department of Public Health*, *op. cit.*, p. 182.

74. *Ibid.*, p. 160.

75. *Edmonton Journal*, January 24, 1967.

76. *Edmonton Journal*, January 24, 1967.

77. *Albertan*, July 20, 1966.

78. *Edmonton Journal*, September 3, 1966.

79. *Ibid*., November 25, 1966.

80. The writer was present at this meeting.

81. His Honour Judge N.V. Buchanan.

82. The series was written by Karen Harding, a feature columnist with the Edmonton Journal.

83. *Edmonton Journal*, January 24, 1967.

84. *Ibid*., January 25, 1967.

85. *Ibid*., January 26, 1967.

86. *Ibid*., January 28, 1967.

87. *Ibid*., January 30, 1967.

88. *Ibid*., January 31, 1967.

89. *Ibid*., February 4, 1967.

90. *Ibid*., February 9, 1967.

91. *Ibid*., February 10, 1967.

92. *Ibid*., February 18, 1967.

93. *Ibid*., February 21, 1967.

94. *Ibid*., May 30, 1967.

95. *Calgary Herald*, January 26, 1967.

96. *Ibid.*, February 6, 1967.

97. *Albertan*, March 17, 1967.

98. *Edmonton Journal*, March 20, 1967.

99. *Calgary Herald*, March 29, 1967.

100. *Ibid.*, June 7, 1967.

101. *Ibid.*, March 10, 1967.

102. *Ibid.*, March 10, 1967.

103. This report was first presented to the Minister of Public Health, who was then obligated to submit copies to the Members of the Legislative Assembly.

104. *Edmonton Journal*, March 4, 1967.

105. *Ibid.*, April 1, 1967.

106. *Ibid.*, April 15, 1967.

107. *Ibid.*, May 20, 1967.

108. *Calgary Herald*, February 9, 1967.

109. *Albertan*, March 11, 1967.

110. *Edmonton Journal*, March 22, 1967.

111. Based on discussions with the architect, Douglas J. Cardinal, and officials of the Department of Public Works, Government of Alberta.

112. This was contained in a memorandum to senior medical

officials at the mental hospitals in Alberta.

113. Edmonton Journal, March 13, 1967.

114. Ibid., October 6, 1967.

115. Ibid., October 7, 1967.

116. Correspondence from Special Consultant to the Premier of Alberta, February 24, 1967.

117. Dr. W.R.N. Blair, Mental Health in Alberta, Vol. I, Edmonton, Alberta: Queen's Printer, Province of Alberta, 1969, p. 33.

118. Ibid., p. 34.

119. Ibid., p. 34.

120. Ibid., p. 35.

121. Ibid., p. 36.

122. Ibid., pp. 39-41.

123. Ibid., pp. 86-101.

124. Ibid., p. 298.

125. Ibid., pp. 310-11.

126. Dr. W.R.N. Blair, Mental Health in Alberta, Vol. II, Edmonton, Alberta: Queen's Printer, Province of Alberta, 1973, p. 293.

127. Ibid., pp. 293-95.

128. This famous electrical blackout occurred on November 9, 1965.

129. Jacques Ellul, The Political Illusion, New York: Alfred A. Knopf, 1967, p. 162.

130. Easton, *op. cit.*, p. 133.

131. This occurred during the Spring of 1971, a few months before the defeat of Social Credit. The political scientist was an Executive Assistant to the Premier.

132. This slogan is the title of a recent economic analysis by E.F. Schumacher, Small is Beautiful, New York: Harper & Row, 1973.

133. Excerpts from a working paper, "Notes on the Human Resources Development Authority," July 19, 1968.

134. The Human Resources Development Authority Act, assented to on April 11, 1967.

135. The Human Resources Development Authority Act, Revised Statutes of Alberta, 1970, Chapter 176, Edmonton, Alberta: Queen's Printer, Province of Alberta, p. 2169.

136. One continuing difficulty involved ministers, appointed to the Human Resources Development Authority, who continued to act as representatives of specific portfolios, instead of assuming a general role as members of the Authority.

137. Legislation establishing the Human Resources Research Council was passed in the Alberta Legislature, Spring Session, 1967.

138. The Human Resources Research Council Act, Revised Statutes of Alberta, 1970, Chapter 177, *op. cit.*, pp. 2171,2172.

139. Based on discussions with former officials of the Human Resources Research Council and the Government of Alberta, including the Associate Director of the H.R.R.C. who was the economist involved in the cited incident.

140. The Random House Dictionary of the English Language, New York: Random House, 1966, p. 1458.

141. Ibid., p. 902.

142. Ellul, op. cit., p. 141.

143. Michel Crozier, The Bureaucratic Phenomenon, Chicago: The University of Chicago Press, 1964, p. 191.

144. Ibid., p. 190.

145. In the governmental structure of Sweden, the ministries are legally separate from the Boards which carry out the administration of legislation.

146. Reinhard Bendix, Max Weber: An Intellectual Portrait, London: Methuen, 1959, pp. 451-52.

147. Orders-in-Council are the official Cabinet decisions that have been signed by the Lieutenant-Governor of the Province.

148. Ellul, op. cit., p. 143.

149. Professor Ellul has served in public office as the Deputy Mayor of Bordeaux, France.

150. Unless the Premier has a systematic checking system to follow through on commitments made during local tours, he has no way of determining whether a promised remedial action has occurred. He may assume a department has undertaken the action, but the department may have already fully committed its staff and budgets, and accordingly are reluctant to act unless the commitment is accompanied by further funding.

151. Bendix, op. cit., p. 452.

152. One proposal relating to the newly established Athabasca University in Alberta suggested the construction of "space

sheds", which essentially are low-cost structures that could be rebuilt and remodelled quickly to suit changing purposes of the institution. This concept is very remote from traditional construction of high-cost steel and stone edifices which last for decades, and which eventually require expensive remodelling in order to suit reformed objectives of the institution.

153. In Gentofte, a subdivision of Copenhagen, administrators in the elderly nursing care programs chose to remodel private homes and deliver meals with the help of fire department personnel as an alternative to moving these individuals, who preferred the freedom of their private homes, to large, regional nursing hospitals, as is the present practice in Canada.

154. Ellul, op. cit., p. 144.

155. In the Government of Alberta, administration and management affairs come under the jurisdiction of the Personnel Administration Office, a centralized agency applying generally uniform procedures across the entire range of government departments.

156. The Provincial Secretary was originally a legal position which served as the Keeper of the Great Seal of Alberta and Registrar of the Province. Over a 50-year period, it developed into a large department administering many unrelated service programs. As part of an overall government objective to integrate program areas, these programs were reassigned to other departments, and the Provincial Secretary reverted to a position held by the Attorney General.

157. Government administration continues to expand bureaucratic styles of organization to new program areas on the grounds that it is the most efficient form of management.

158. This is a term coined to parallel the social psychological concept of "death wish".

159. Report prepared by the Special Consultant for members of the Cabinet, "Proposed Employment Development Fund," March 15, 1971.

160. *Ibid*.

161. A draft document from the Minister of Finance, Government of Canada, to the Provincial Treasurer, Government of Alberta, January 15, 1971.

162. Letter from the President of the University of Lethbridge to the Minister of Social Development, Government of Alberta, January 22, 1971.

163. Letter from the Prime Minister of Canada to the Premier of Alberta, March 3, 1971.

164. Report of the Deputy Provincial Treasurer, Government of Alberta, April 7, 1971.

165. Letter from the Special Consultant to the Premier of Alberta, April 8, 1971.

166. Minutes of the meeting of the Special Programs Committee, Government of Alberta, April 8, 1971.

167. Gerhard E. Lenski, *Power and Privilege*, New York: McGraw-Hill, 1966, pp. 369-382.

168. It is estimated, from discussions with the Civil Service Association of Alberta, that over 95 percent of the Civil Service employees in Alberta are engaged in "mechanical" tasks.

169. See Chapter II of this thesis.

170. One incident in 1966 clearly demonstrated the official limits on policy discussions. A recent university graduate (who is now a senior parks planner in the Province of British Columbia) voluntarily prepared and distributed a major document on government parks policy. He was called in by the Deputy Minister, politely reprimanded, and directed to personally recover every copy he had distributed.

171. F.J. Roethlisberger, and William J. Dickson, *Management*

and the Worker, New York: John Wiley & Sons, 1964.

172. While the writer was a patient at the University Hospital, Edmonton, he observed a time-motion study being undertaken to determine the efficiency of nurses in their ward work.

173. Cf. motions passed at the 1974 Annual Convention of the Civil Service Association of Alberta.

174. George C. Homans, The Human Group, London: Routledge & Kegan Paul, 1951, p. 48 ff.

175. This type of comment is often heard when a program recipient applies just past a regulated deadline, but is nevertheless accepted.

176. Edmonton Journal, May 9, 1973.

177. The Native People (Edmonton), Vol. 6, No. 19, May 11, 1973.

178. Edmonton Journal, May 10, 1973.

179. Ibid., May 8, 1973.

180. Ibid., May 9, 1973.

181. Ibid., May 9, 1973.

182. Alberta Hansard, March 20, 1972.

183. Edmonton Journal, May 9, 1973.

184. Alberta Hansard, May 7, 1973.

185. Edmonton Journal, May 9, 1973.

186. Ibid., May 10, 1973.

187. Wendy Gray, *The Native People*, *op. cit.*

188. Report from the Vice-Chairman, Alberta Hospital Services Commission, to the Minister of Health and Social Development, Government of Alberta, July 25, 1973.

189. Section 26-9-1-(2), Order-in-Council 1312/73, Government of Alberta, August 28, 1973.

190. This is an English translation of the concept used by the imprisoned Ukrainian civil activist, Valentyn Moroz, to describe the passive citizen.

191. L.N. Tolstoy, *Resurrection*, Middlesex, England: Penguin Books, 1966, pp. 447-48.

192. *Ibid.*, p. 450.

193. The Salvation Army, with government grant assistance, has provided many social services to poor urban residents, particularly transients.

194. The Society for the Prevention of Cruelty to Animals operates pet control programs, under municipal contracts, in the Vancouver region.

195. See Victor Ehrenburg, *From Solon to Socrates*. London: Methuen, 1968, pp. 204-25.

196. Behm, "Kapitulirt der Staat?", *Politische Meinung* (1962), in Jacques Ellul, *The Political Illusion*, New York: Alfred A. Knopf, 1967, p. 138.

197. Easton, *op. cit.*, p. 391.

198. For an extended analysis of propaganda, see Jacques Ellul, *Propaganda*. New York: Alfred A. Knopf, 1967.

199. In 1937, the Social Credit government introduced the *Press Act*, which was not designed to censor information but to require that newspapers provide free and equal space in their publications for government to rebut articles which it felt were biased and unfair. In 1938, the Supreme Court of Canada declared this Act *ultra vires*, disallowing its implementation.

200. These three-stage surveys, undertaken in the Spring of 1971, accurately monitored the decline of popular support for the Social Credit government, and the increase in public support for the Progressive Conservative party under the leadership of Peter Lougheed, now Premier of Alberta.

201. In the early stages of the Watergate case, former President Nixon stated that any cover-up activities, of which he was unaware, were the responsibility of subordinates. Evidence from tape recordings presented in federal court revealed Nixon's direct involvement.

202. Politicians sometimes magnify simple issues into crisis proportions in order to keep attention from shifting to other policy areas that are in serious difficulty.

203. The classic illustration of this is the perjured witness who falsifies testimony in order to protect an associate from having his true activities disclosed.

204. In the Canadian provincial election in British Columbia in 1972, Premier Bennett stressed the threat from Socialists, and in the 1974 general election in Britain, Prime Minister Heath warned the public about communist influence in the labour movement.

205. Questioning and search procedures by national police forces, such as the RCMP, are often imposed on law-abiding citizens, without any explanation except that the action is being undertaken for security reasons which are unspecified.

206. George Kupfer, *Edmonton Study: Community Opportunity Assessment*, Edmonton, Alberta: Queen's Printer, Province of Alberta, 1967, p. 175.

207. This minister served in the Government of Alberta as Minister of Highways.

208. Excerpt from Press Release, Strom Team Headquarters, Edmonton, Alberta, November 20, 1968.

209. Edmonton Journal, December 2, 1968.

210. George Kupfer, George Diadio, and Harland Magneson, Resource Mobilization for Employment, Edmonton, Alberta: City of Edmonton Social Service Department, 1970.

211. This was one suggestion presented by representatives of the Lesser Slave Lake community of Faust, relating to the economic rehabilitation of this low-income area.

212. The Community Development program was re-established under the Human Resources Development Authority. With the change of government, the remaining officers were reassigned to other government agencies.

213. It is unlikely that the entire Watergate episode would have been disclosed had it not been for the diligent efforts by reporters of the Washington Post.

214. A Chicago-based organization, the Audit Bureau of Circulation, is the recognized authority for authenticating circulation records of newspapers, upon which advertizing rates are based.

215. An internal government survey indicated a significant increase in basic information by residents who read the issues of these magazines.

216. Edward Goldsmith, "Is Science a Religion?" in The Ecologist, Vol. 5:2 (February 1975), p. 62.

217. Jay W. Forrester, "Counterintuitive Nature of Social Systems," in Technology Review, Vol. 73, 1971.

218. Mihajlo Mesarovic, and Eduard Pestel, Mankind at the Turning Point, New York: E.P. Dutton & Co./Reader's Digest Press, 1974, pp. 53-54.

219. Gideon Sjoberg, and Roger Nett, A Methodology for Social

Research, New York: Harper & Row, 1968, p. 290.

220. *The Americana*, A Universal Reference Library, Vol. VII, New York: Scientific American Compiling Department, 1912.

221. Max Nicholson, *The System: The Misgovernment of Modern Britain*, New York: McGraw-Hill Book Company, 1967, p. 105.

222. Cf. Gwynn E. Nettler, "Knowing and Doing," in *Social Science and Social Policy*, Edmonton, Alberta: Human Resources Research Council of Alberta, 1971, p. 7 ff.

223. Peter F. Drucker, *The Age of Discontinuity*, New York: Harper & Row, 1968, p. 212.

224. *Ibid*., p. 220.

225. Gerhard E. Lenski, *Power and Privilege: A Theory of Social Stratification*, New York: McGraw-Hill Book Company, 1966, pp. 348-49.

226. *Ibid*., p. 349.

227. E.F. Schumacher, *Small is Beautiful*, New York: Harper & Row, 1973, p. 228.

228. *Ibid*., p. 230.

229. John A. Hostetler, and Gertrude Enders Huntington, *The Hutterites in North America*, New York: Holt, Rinehart and Winston, 1967, p. 32; also see Karl Peter, *Factors of Social Change and Social Dynamics in the Communal Settlements of Hutterites, 1527-1967*, Ph.D. thesis, University of Alberta, 1967.

230. See R.M. Kanter, *Commitment and Community*, Cambridge, Mass.: Harvard University Press, 1972.

231. See Jan Myrdal, and Gunn Kessle, *China: The Revolution Continued*, New York: Vintage Books, 1972; and J.K.

Galbraith, A China Passage, New York: New American Library, 1972.

232. Drucker, op. cit., p. 299.

233. A discussion of this approach is found in "Systems Engineering and Urban Problems," included in the work Cybernetics and the Management of Large Systems, Edmond M. Dewan (ed.), New York: Spartan Books, 1969, pp. 147-56.

234. The Swedish firm of Volvo has built a new factory in Kalmar, Sweden, based on work team organization. This has replaced the traditional assembly line for the manufacture of cars.

235. This situation was pointed out by an analyst of the Government of Alberta, who felt the surroundings for marriage license application and civil ceremonies should have been a positive and sensitive architectural environment.

236. Chancellor Brandt of West Germany resigned after it was revealed that one of his personal assistants was a high-ranking Soviet spy. President Nixon of the United States resigned following collapse of his assertions that he was unaware of legal interference in the Watergate case.

237. Based on discussions with the Danish Ambassador to Canada, 1975.

238. Senator Keith Davey conducted a Senate inquiry into the mass media during the early 1970's.

239. The Committee for an Independent Canada is an independent organization championing economic nationalism. Its policy positions are generally based on thorough, independent research, which often produces information at variance with government.

240. The National Farmers' Union, one of a number of Canadian farmers' organizations, has gained a reputation for aggressive, confronting strategies in relation to governments.

241. The Canadian Mental Health Association is a major voluntary action organization which undertakes public education programs, and lobbies for improved governmental programs in the mental health field.

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CANADIAN THESES ON MICROFICHE

26910

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